Gleanings in Bee Culture

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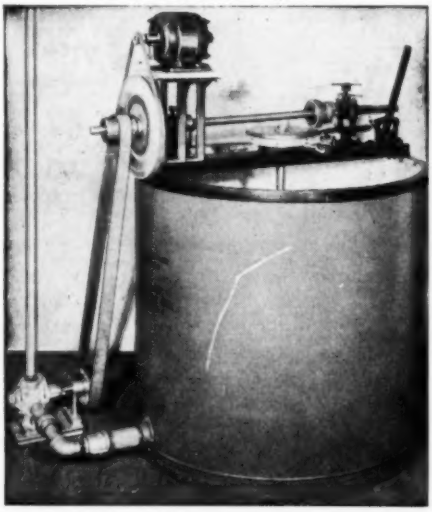

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The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from Producing Areas (last half of June).

California Points: Southern California.—The weather has been generally clear. Temperatures along the coast were normal to slightly below normal, but in the interior valleys they averaged considerably above normal. As a result the Buckwheat flow will not last as long as usual, and queens have stopped laying because of the heat. Drying winds and lack of moisture have also been effective in drying up honey plants throughout the area. The quality of this year's Sage honey is reported unusually good. The crop to date in San Diego County is reported as not over 30 pounds to the colony. And the crop in the other counties will apparently be less than had been hoped for. A weaker market tone has been evident. Many beekeepers have offered their holdings of honey more freely, but have found difficulty in locating buyers who are willing to purchase stocks in excess of their immediate needs. Sales by beekeepers in ton lots or more at Southern California delivery points, per lb.—Orange, Water White 5-5⅛c, Extra White 4¾-4⅞c, mostly 4¾c, White mostly 4½c; Sage, Water White 5-5⅛c, few high as 5¼c, Extra White 4¾-4⅞c, White 4½-4⅝c; Sage-Buckwheat, Amber to Extra Light Amber $4.50-5.05 per case of 120 pounds; Chuckawalla Valley Light Amber to Extra Light Amber Alfalfa $4.25 per case of 120 pounds delivered Los Angeles, other sales $4.00 per case at country points. Beeswax reported in fairly good demand, with good yellow to bright yellow wax bringing beekeepers 20-21c per lb., and darker grades selling at mostly 18-19c, few lots low as 17c per lb. delivered Los Angeles.

Imperial Valley.—The shortage of irrigation water for alfalfa fields early in June cut short the available nectar. Since then, however, water has been ample and beekeepers are hopeful for an additional flow from alfalfa. Sales reported Light Amber to Extra Light Amber Alfalfa $4.25 per case of 120 pounds delivered Los Angeles.

Central California.—Temperatures have been near normal along the coast and somewhat above normal in the interior valleys. No appreciable precipitation reported. Hot weather has reduced the yield from buckwheat and spikeweed, though some beekeepers report fair crops from these sources. The Sage crop is spotted. In the coastal area sage yields were restricted by a heavy fog which prevented bees from gathering the nectar, but in the San Joaquin Valley some beekeepers report a good flow of high quality Sage honey. The buckwheat yield will be generally light. Some beekeepers are moving from sage-buckwheat locations to valley areas, where they are working on alfalfa, cotton, and spikeweed. The recent hot weather has dried up spikeweed and wild buckwheat considerably, but other nectar-bearing plants are still normal in growth, abundance and vigor. Star thistle looks good. Most colonies are in good condition, and some are heavy with brood. Stores reported ample. Dealers have been fairly active in the field, but are rarely buying more than for current needs. Most buying is centered around Sage honey, with a fairly heavy volume purchased. Because of the rela-

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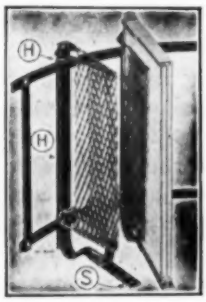

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tively low prices beekeepers who are in a position to do so are holding their stocks for higher prices. Sales by beekeepers in ton lots or more, per lb. delivered Bay Cities: Sage, White to Water White 5-5½c, some held higher; Sage-Buckwheat, Light Amber to Extra Light Amber 4½-4¾c; Light Amber Buckwheat 3¾-4c.

SUMMARY.—Rains have again been lacking west of the Great Plains, but further east rains have been frequent, and in many areas have been heavy. The West has had abnormally high temperatures most of the time, while it has been much cooler than normal throughout the White Clover Belt and in portions of the Southwest. The combined coolness and rainfall have kept bees in the hives much of the time in the upper portion of the White Clover Belt and have limited the amount of time that bees could work on the abundant clover bloom. In the southern portion of the White Clover Belt bees were able to fly more freely, and many colonies in Indiana and Illinois have already obtained over 100 pounds of White honey. The Plains Area reports a spotted flow, but in many yards bees have already from 75 pounds of honey upward. Throughout the Plains States and the White Clover Belt, however, are many thousands of colonies which were weak at the beginning of the flow and have been building up on it so far. Prospects are good for a later flow in this area, however, when colonies that have built up from packages or divisions should be in a position to gather considerable nectar. In the Mountain States thrips and weevils are again serious, but prospects are for a fair crop of honey. Conditions in the Pacific Northwest vary widely. It now appears that the California crop may not be as large as was anticipated earlier. Swarming has been serious almost everywhere this season except where controlled very carefully. The quality of honey taken off so far this season is reported unusually good. Stocks of 1939 crop honey still remaining in beekeepers' hands are light in most eastern sections, and only occasional beekeepers in the West retain appreciable quantities of old crop honey. Market levels have not strengthened, and in some cases there has been a weak undertone apparent, and occasionally lower prices. Comb honey is extremely scarce, but new crop comb will soon be ready.

Monthly Report of Honey Producers

Early in July we sent the following questions to honey producers: 1. At what price has honey been sold or contracted for, if any, in large lots (carload lots or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 2. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case? 3. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 4. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 5. How does the number of colonies that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent.. 6. What is the condition of the honey plants at this time in your locality as compared with the average? Give answer in per cent.. 7. What is the per cent of winter and spring loss of colonies (if any) in your locality? Give answer in per cent. 8. What is the present condition of the colonies in your locality as compared with normal? Give answer in per cent. The answers received are tabulated as follows:

July date rec'd.	State.	Name.	1. Large lots. Ex.	Comb.	2. To Grocers. Ex.	Cb.	3. To consumers. Ex.	Comb.	4. Movement.	5. No. of colo.	6. Cond. of plants.	7. Win. Spring loss.	8. Cond. of colo.
8	S-Ala.	(J. C. Dickman)			.40	3.60	.50	.20	Fair	100	90		90
8	B. C.	(A. W. Finlay)	.09		.65		.85		Fair		100	15	100
5	S-Calif.	(L. L. Andrews)	.05				.52	.19	Fair	100	75	15	100
9	C-Calif.	(Davis Bros.)	.04⅛						Slow	100	125		80
7	SE-Colo.	(Otis E. Adcock)			.42	3.00	.50	.20	Slow	150	100	5	100
6	E-Conn.	(Allen Latham)			.75	5.00	1.00	.28	Fair	75	100	4	75
10	S-Fla.	(C. C. Cook)	.04		.35		.50		Slow	110	100	10	100
10	C-Fla.	(Harry Hewitt)			.50		.65		Slow	100	100	0	100
6	SE-Ga.	(J. J. Wilder)	.05½		.40		.55		Fair	100	100	15	100
7	NC-Ills.	(A. L. Kildow)					.50		Slow	75	50	20	100
6	NC-Ind.	(T. C. Johnson)			.50	3.00	.65	.17	Slow	75	100	25	100
6	NW-Ind.	(E. S. Miller)					.65	.15	Slow	90	90	15	100
5	W-Iowa	(E. G. Brown)					.49		Fair	100	110	25	100
8	N-Maine	(O. B. Griffin)						.28		70	90	40	75
3	C-Md.	(S. G. Crocker)			.60	3.60	.75	.25	Slow	75	75	25	100
10	N-Mich.	(Ira D. Bartlett)					.49	.18	Slow	75	75		80
6	S-Mich.	(Floyd Markham)			.50		.65	.15	Slow	75	75	10	75
8	C-Mich.	(E. D. Townsend)								100	100		
11	W-Minn.	(B. L. Morehouse)	.05		.42		.55		Fair	90	100	8	95
10	C-Nebr.	(J. H. Wagner)	.05			3.60	.35	.17	Slow	60	50	8	70
10	NW-N. Y.	(Geo. B. Howe)			.50		.65		Fair	100	100	15	100
6	C-N. Y.	(F. W. Lesser)	.07						Fair	80	70	15	90
4	NW-N.C.	(C.S. Baumgarner)			.65		.85	.25	Slow	100	100		100
5	C-Ohio	(R. D. Hiatt)					.60		Slow	80	100	25	100
13	NC-Okla.	(C. F. Stiles)			.45		.65		Fair	90	100		95
9	W-Ore.	(H. A. Scullen)	.05		.35		.50		Slow	100	100		100
8	C-Penn.	(Harry Beaver)			.50		.60		Slow	75	90	30	100
9	SE-Pa.	(D. C. Gilham)			.70	4.25	1.00	.25	Slow	80	90	28	95
8	W-S. C.	(E. S. Prevost)							Fair		100		90
11	SE-S. D.	(J. F. Norgren)			.40		.49		Fair	90	90	20	90
8	E-Tenn.	(W. L. Walling)					.93		Slow	100	110	3	100
6	C-Texas	(T. A. Bowden)			.45		.55		Slow	100	100	3	100
5	S-Texas	(H. B. Parks)	.06		.45		.55		Fair	90	70	2	90
8	N-Utah	(W. H. Hendricks)				3.12	.90			75	90	25	100
7	N-Wyo.	(Earl C. Reed)			.40		.50		Slow	90	75	20	100

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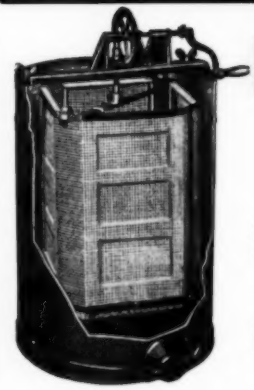

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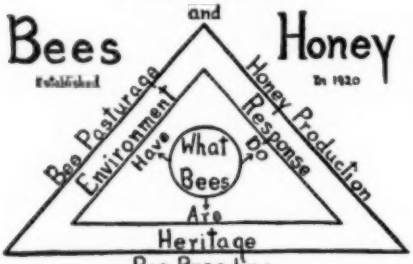

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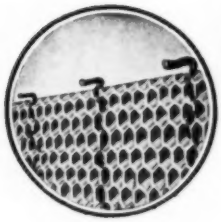

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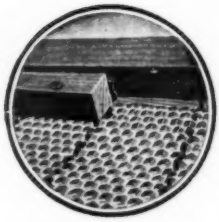

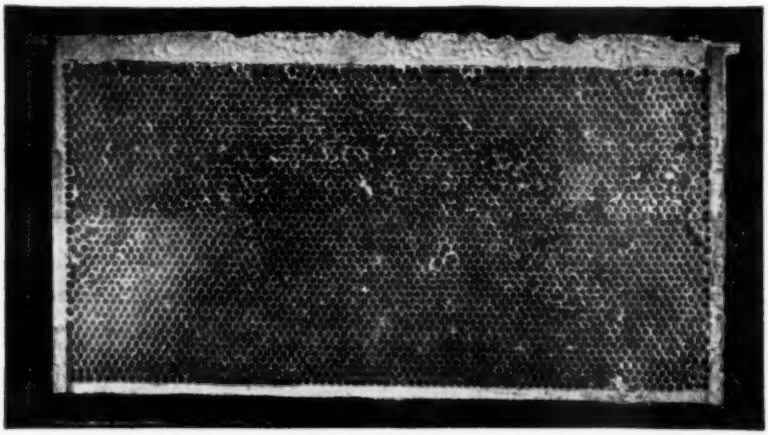

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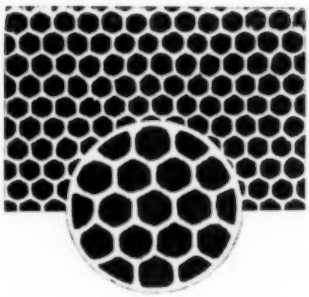

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No. 8

Gleanings
in Bee Culture

August
1940

Does Breeding from the Best Colonies Pay?*

By Mykola H. Haydak and Maurice C. Tanquary
University of Minnesota, St. Paul

The importance of rearing queens from the best colonies, at least so far as the production and ease of handling are concerned, has long been realized. European bee breeders have been practicing such selection for decades, because it was imperative to have the most "economical" bee in order to utilize the poor conditions of the honey flow which have become a general phenomenon in the majority of industrialized countries of the old continent.

Until the past few years most of our beekeepers paid no particular attention to stock, considering that a young queen is all that is necessary for best results. However, present day conditions in all industries have forced people to increase their efficiency and their production per unit and to lower the cost of production. The beekeeping industry is no exception and various studies in the economics of honey production have shown that the average production per colony is one of the most important factors affecting the cost of production. As more attention was paid to the records of individual colonies a tremendous difference was noted in the amounts of honey produced by different colonies. This pointed definitely to the influence of stock as being an important factor, and the next logical step was selection. One need only glance through the last few volumes of the bee journals and note the articles on this subject to appreciate the interest that is being taken in this important phase of beekeeping. It is an encouraging sign.

The leading paper in this respect is that of C. L. Farrar and C. W. Schaefer of the U. S. D. A. Madison Field Laboratory. In studying the causes of supersedure, they found out that "one obvious method of reducing queen losses due to poor queens is to improve the quality of the stock, and this is a matter of interest to the entire beekeeping industry. During the period of 1935-'38 marked differences in stock were noted. One strain obtained from six sources showed a consistently poor record in widely separated apiaries. Approximately 750 queens of this stock were used, and a common hereditary background was evident because the bees had similar physical characteristics, the majority of the queens tended to produce brood of low quality, and it was known that the six queen breeders had exchanged stock. Another strain, including over 550 queens, tested during the same period and in the same apiaries had a record as consistently good as the other was poor. The poor quality of certain stock emphasizes the need for a general improvement of breeding stock as the first step toward reducing queen losses and increasing the returns from package bees." (U. S. D. A. Bee Culture Circular E-473, May 1939). Many practical bee breeders came to the same conclusion.

Clarence Tontz (Gleanings, Vol. 68, p. 137, 1940), describing his experiences with packages from dif-

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ferent breeders, states that "while the colonies from one stock had only one case of supersedure before the honey flow and produced 155 pounds per colony, those from the other stock had many cases of supersedure and the average production was 85 pounds per colony. He thinks that the best plan is to select the best queens and arrange for a southern breeder to raise daughters from them to requeen the colonies of poor stock. It is necessary that the poor stock of bees be strictly weeded out".

The editor of The Bee World (Vol. 19, p. 2, 1938) stresses the importance of requeening with the best stock not only of one's own apiaries, but of those in the vicinity. In other words—for better results beekeepers must cooperate. There can be no question as to the soundness of such advice: the drones can fly everywhere and a dozen stray drones from a poor stock may spoil all one's efforts in improving the quality of his bees. Dr. Freudenstein of Germany (Bee World, Vol. 20, p. 29, 1939) gives evidence of a steady rise in the average crop per colony in his district since he started distribution of the queens from a better stock to his neighbor beekeepers. E. S. Miller (Am. Bee Journal, Vol. 79, p. 345, 1939) suggests to those beekeepers who will try to improve their own stock by rearing queens from the best colonies that "it would be advantageous to move to an outyard all colonies that do not show the desired characters and to restrict queen rearing to a yard reasonably well isolated from all other bees".

A striking example of the results of a planned selection may be the case of Geo. N. Polhemus. He kills all the bees in the fall except the breeding queens which he sends to a southern queen breeder. The packages in the spring are headed by queens reared by the breeder from Mr. Polhemus' own selected strain. In 1938 he got a crop of over 21,000 pounds of honey from 50 colonies (Bee World, Vol. 20, p. 73, 1939). That the southern bee breeders more and more recognize the importance of a comprehensive plan of stock selection is obvious from the article by E. C. Bessonet (Am. Bee Journal, Vol. 78, p. 454, 1938), where he stresses two main breeding points, namely, gentleness and productivity.

The value of selection should be still more appreciated from the fact that there are colonies more resistant to AFB than others. In case queens from such colonies will be introduced in commercial beekeeping, the importance of keeping only a pure stock cannot be over-emphasized.

In the summer of 1935, at the University of Minnesota, we started breeding queens from the best colonies in our yard. It is possible now to present the results of this selection for the information of beekeepers. The productivity and gentleness of colonies served as the main breeding points.

For comparison we are using the production of only those colonies which went through from 1934 to the present. Some of the experimental colonies perished from one or another reason during this time and they are not counted in the computation of the results.

We can divide the experimental colonies in the following groups:

I. Poor colonies which were requeened regularly with the queens from the best stock because of their low productivity and bad behavior.

II. Good producers which were requeened only because of the age of their queens.

III. Our best breeders—requeened by supersedure.

IV. Poor colonies which requeened themselves by supersedure.

Table of Results

Group and No. of Colonies	Period 1934-'35 Production in group in lbs.			Period 1938-'39 Production in groups in lbs.			Increase
	Lowest	Highest	Average	Lowest	Highest	Average	
I (11 colonies)	−43	168	50	286	576	399	8x
II (5 colonies)	227	374	291	281	594	390	1.3x
III (3 colonies)	217	399	308	321	535	404	1.3x
IV (3 colonies)	60	146	106	335	442	400	4x

We considered as poor colonies those which had combined production for 1934-'35 less than 200 pounds and as good colonies those whose production exceeded 200 pounds. The vicinity of the University is comparatively poor beekeeping territory.

From an examination of the table one can see that the average production of the apiary has considerably increased and that there was much greater uniformity in the average production in all groups under investigation. This increase was due not to the fact that the last two years were better than 1934-'35. The productivity of breeders and that of the colonies in Group II has increased only 1.3 times, while the productivity of the poor stock has increased 8-fold and there was a greater uniformity of production among the individual colonies of the group. Moreover, the colonies of Group IV showed also an increase in production. This was apparently due to the fact that the virgins from these colonies had a better chance to mate with a better quality drones than before.

The results of the experiment clearly demonstrate that the selection of queens from the best colonies in the apiary not only tends to increase the productivity of the poorer colonies requeened by the selected queens, but it causes a greater uniformity of the average honey crop per colony, as well as raises the production of poorer stock which has not been requeened for one or another reason.

A Golden Wedding

Mr. and Mrs. John Adams of Ransomville, N. Y., celebrated their golden wedding on May 29, 1940. Over 200 relatives and friends attended the reception at their home from 7 to 10 o'clock. Refreshments were served. All wished them many more happy wears of wedded life. Guests were present from St. Thomas, Ont., Buffalo, Niagara Falls, Lockport, Newfane, Wilson, Youngstown, Lewiston and Ransomville.

XUM

The Influence of Warehousing on Honey Marketing

By Wendall Shore, of Hamilton & Co., Los Angeles, Calif.

[Summary of Talk Delivered at National Beekeeping Conference, Sacramento, California, November 7, 1939.]

There is hardly a producer who has been completely satisfied with the price at which honey has been moving for the past several years. There is hardly a producer who does not feel that he has been taking money from one pocket and putting it into the other, so nearly does the sales price of his production compare with the cost of producing it. In all too many instances he suffers an actual loss.

The cry has naturally gone up that something should be done to remedy the situation and ideas of varying merit have been advanced from every quarter.

Honey, like other commodity items, has not enjoyed a particularly good market for several years past and, also like other commodity items, it has been groping along at low price levels ever since the depression. It is true that the index of prices has been down but what is not generally known by the producers is the fact that the blame for low prices on honey can largely be placed on their own shoulders.

In virtually every other line of production there is a marketing association or some group that controls or advises on prices, while among the beekeeping fraternity there is no one group which has anything to say about prices in general.

To believe that any central marketing agency could be evolved within the honey industry would be perhaps wishing for Utopia but there certainly can be steps taken that will bring about a betterment of conditions.

In examining the subject more closely, we are first of all benefitted by the fact that it is not necessary for a honey producer to sell his crop as soon as it is extracted. He is not in the same category as the lettuce growers or other producers of perishable products who, by the very nature of their production, must find a market immediately their crop is ready. They must accept the price which is offered at the time their crop is ready for sale. The producer, on the other hand, can hold his crop, at least so far as the nature of the crop itself is concerned, until such time as he feels the quotations offered by buyers are acceptable to him.

Since the average producer is not heavily financed and consequently must rely on sales to meet his living expenses, pay roll, and all other items on which he incurs charges during the course of the year, some means must be found whereby he can realize cash without actually throwing his honey onto a market which is depressed and does not allow him a full return for his efforts. The answer in part is warehousing.

Since the subject of this discussion is the "Influence of Warehousing on Honey Prices", it must first be shown that by an intelligent timing of the sale of honey higher prices can generally be obtained and in this connection possibly the best example which can be cited is the reports issued by the U. S. Department of Agriculture. For example, in 1934 carload lots of white orange honey in California were quoted to the producer for the last half of April between 4¼ cents and 4¾ cents, while in the last half of December the price advanced to from 6 cents to 6¼ cents per pound, a net gain of virtually 2 cents. The same year light amber to extra light amber alfalfa honey advanced from $5.00 per case the first half of July to $6.75 per case the last of December.

In 1935, orange honey advanced from 4½ cents to 6¼ cents and alfalfa from $4.30 to $5.75 per case. In 1936, orange honey went from 5 cents to 6½ cents per pound and alfalfa from $4.75 to $6.20 per case.

I am not taking these figures from my own experience but simply citing three consecutive years as the statistics are given in Honey Report No. 360 of the Federal State Market News Service dated April 7, 1939.

From these statistics it is readily seen that honey which has been held for a period of six to eight months from the time of its extraction has advanced in price approximately 1½ cents per pound. No further argument should be necessary to estab-

lish the fact that **it frequently pays to hold honey for a moderate length of time before selling.**

In many instances the trade is not ready to buy in large quantities at the time the honey crop is produced. Here in California our crops of sage and orange honey put in a fairly early appearance but the demand for these varieties does not get into full swing until well along in the summer and early fall. The producers who sell their orange or sage honey as soon as it is extracted run the chance of penalizing themselves by accepting a price which is undoubtedly lower than could be obtained later in the season provided the majority of the producers withheld their production from the market.

At this point there will undoubtedly be the objection raised that while it is desirable to hold honey until there is a demand for it that not everyone is fortunate enough to have sufficient capital to carry them through until a sale can be created and this brings us to the role played by warehouses through the country.

There is hardly a locality where honey cannot be stored and a Negotiable Warehouse Receipt obtained. This receipt can be used as security in obtaining a bank loan to supply ready cash until such time as prices are at a level where it appears advisable to dispose of the honey.

Withholding honey from the market in this fashion can only work to advantage if the rest of the producers will do likewise. It would avail a beekeeper nothing to place his honey in storage in the expectation of getting better prices later in the season and then have his friends consistently sell the same quality of honey as his own at low figures. The ever-present difficulty of small lot sales creating a market would have to be combatted. The beekeeper with only a few hives who produces less than a ton of honey per year and the man who has in the past sold a few cases of his honey at a time so as to obtain ready cash are factors which play an important part in the creation of price levels and the beekeeping fraternity would do well to induce these smaller producers to sell their honey along with the carload producers. If they need immediate cash then it should be up to the carload producers to see that they are provided for in order that they can better protect the price structure which they are endeavoring to build.

In the past there have been a number of organizations formed primarily for the purpose of marketing honey. Many of these organizations have met with an untimely end while a few of them have gone ahead with a considerable measure of success. Some sort of producers' organizations would be definitely desirable. A group, no matter how small, firmly set in holding for what they consider a fair price has a marked effect on the rest of the producers in that locality. If a few key men could get together it should not be long before their lead would be followed by others. It is perhaps useless to expect anything in the nature of a national marketing organization among the beekeepers themselves but certainly small groups interested in earning a moderate return on their investment and for their labors could communicate with each other through a central news clearing bureau and be of material help to one another in giving first hand information as to prices prevailing in their particular localities and in nearby large markets.

Going back to the warehousing aspect of the subject under discussion we find that not only is it desirable from the standpoint of obtaining better prices through ordinary marketing but it also does a great deal from the standpoint of protecting the cans and cases containing the honey from inclement weather conditions and from dirt and dust. There is no one who likes to go to a store and purchase a can or a package that is dirty and of poor appearance and the same is equally true when it comes to the containers in which honey is sold, whether they be in bulk or retail packages. Too frequently we find hundreds of cases of honey stacked up on dirt floors or out in the open with little or no protection.

From the honey buyers' standpoint it would be very desirable if producers in a certain locality could decide on a particular warehouse in which to store their production. The accessibility of the honey for examination and for delivery would be a real factor in inducing buyers to use honey stored in that warehouse.

The subject is worthy of study and investigation as is anything that points toward better conditions within the industry and certainly there is no one among us who can say that conditions are not capable of betterment.

XUM

Finding a Florida Bee-Tree

George Allen Reaves

It takes a typical Everglades Florida "cracker" to locate quickly and unerringly, the busy bee's bountiful supply of hoarded honey.

No city dweller likely ever would think that only the bees themselves can best qualify for the job of piloting a would-be honey snatcher directly to the high knot-hole which most generally is the swirling swarm's only point of entry and egress into and from the tall hollow cypress, oak, pine, gum, magnolia, or other tree in which is stored their cunningly guarded gleanings of nature's gift of purest sweets to hungry mankind.

Nor would the city denizen likely know the best method, first of capturing his winged guide and then how to follow its tracing directly to the tree.

Neither would any but the "cracker" know enough not to interrupt or undertake to snare Mr. Bee in his busy buzzings among the sweet-scented magnolia blossoms or the pungent petals hanging from the redolent flowering bay-trees.

But Mr. Everglades-dweller doubtless has inherited the knowledge of his doughty forebears' proven method of indirectly "casting bread upon the waters"—figuratively speaking—by begging, borrowing, or, perhaps, even by pilfering a chunk of honeycomb, which he promptly transports into the fastness of the forest, to place it upon a well located upstanding stump, or a convenient cypress knee, preferably in the midst of an open space among the surrounding trees.

Should one's enquiring mind ask the wherefore and the why of all these "fumadiddles" the answer is perfectly simple.

A live coal of fire is balanced carefully upon the central section of the piece of honeycomb; and when the slow-burning beeswax sends forth sweet-smelling smoke spiralling heavenward, a quite perceptible incense soon tells all bees within a wide radius that a feast is set and awaits their coming to load their cargo-carrying spaces with an already doubly distilled portion of erstwhile honeydew.

And do they come?

Mr. Cracker's invariable rejoinder is: "Mister, I shore allow they does."

After this, it is but a short task for the well-gloved hands of the native cracker to bottle-imprison, one by one, a few angry buzzing bees—soon to hold each one in its turn, gently though firmly, between his first finger and thumb until a small tuft of white cotton that has been dipped into the melted beeswax can be attached securely to a Mr. Bee's hindquarters.

If not too badly injured by the manhandling he has received the homing instinct of the bee promptly causes him to propel himself and his burdening "flag" to his hollow-tree habitation as directly as a "swallow would fly to its nest".

Then, too, it is that the keenly trained eyes of the Everglades habitant far excel the untrained and duller "peepers" of your city dweller in keeping in view the "battle-flag" on its homeward flight.

If the home-site is too far away, it often requires the assistance of a second pair of keen eyes stationed along the now known "flight beam" to help keep in sight the fast speeding white-cotton-tuft beacon streaking by overhead. Sometimes even a third pair of eyes is needed to take up the task of following through until Mr. Pilot-Bee alights.

In the absence of helpers Mr. Cracker first finds out the homeward-bound pilot-bee's direction of flight; then, taking along his fact-finding paraphernalia, he moves on toward the goal, stopping at intervals to send forth further emissaries until he can spot the beacon-bearing bee alighting at the entrance to its homestead.

Oftimes, though, it becomes necessary for the "cracker-man" again to snare and imprison another supply of captive bees, and after tagging, and then marking well their flight direction, to walk well away, half around an imaginary circle, either to the right or to the left, before again releasing still other pilots-to-be; then to trace carefully their courses, computing with exactness where they reach the "point of convergence" of routes with those who had gone on

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Vitamins in Honey

By Dr. Bodog F. Beck

Alfalfa Furnishes Vitamin K

There are not a few conflicting opinions about the vitamin content of honey. Hoyle, of the Lister Institute in London, Hawk, Smith, Bergheim, and others allege that honey is deficient in vitamins. Dutcher thinks honey contains vitamins but the amount is negligible. French scientists found vitamins in honey though not in substantial quantities. Vitamins are often called "sparks" which ignite food substances.

These statements or rather suppositions are of not much import because so far, honeys were analyzed only in search for known vitamins. From time to time new vitamins are discovered and their presence in honey could not have been ascertained. If some plants, which is a proven fact, contain large amounts of vitamins, honey, which is produced from the fluids which circulate under the beneficial influence of the sun in their organic tissues, according to the natural order of things, must contain vitamins. The bee is no bungler and so far was never accused of destroying vital substances.

Recently, a Danish chemist, H. Dam of Copenhagen, discovered a new vitamin and called it hemorrhage-preventing Vitamin K. Its field of usefulness is the prevention, control and treatment of hemorrhages. Vitamin K is also called a blood-clotting vitamin because it shortens the clotting time of blood. Its administration corrects deficiencies due to factors which retard or inhibit blood coagulation. It was clinically shown that mothers and new-born infants, if Vitamin K is given before birth, are less exposed to hemorrhages. This should have great value in postoperative or other fatal bleedings.

Vitamin K has considerable agricultural and apicultural interest. Its main source is alfalfa which is very rich in Vitamin K. So far alfalfa honey was not tested for Vitamin K, for no better reason, because it was unknown.

Alfalfa, this old-world perennial plant, with her explosive blooms, is gaining favor in the United States as an excellent fodder and a surplus honey-producing plant. Needless to enumerate the advantages of the plant which grows in arid soil better than in humid, alkali free land. The best proof of its hardiness is that, according to some naturalists, the root occasionally descends as far as twenty-five feet below the sun-parched surface of the earth to obtain some moisture from the depth of the soil.

Neither is it necessary to praise the generally recognized high quality of alfalfa honey. The many varieties of color and taste of alfalfa honey depends entirely on the difference of the soil. The established fact that this honey very readily granulates is possibly due to its high mineral content and lack of moisture. It is noteworthy that the more moisture the soil contains the less nectar this plant produces. As Lovell ("The Flower and The Bee", p. 202) remarks, "In the Rocky Mountain highlands, alfalfa is the main reliance of the apiarist and no other honey-plant can compare with it, but east of the Mississippi River it is, in most localities, **totally devoid of nectar**".

The alfalfa (from the Spanish alfalfez and the Arabic al-fac-facah—best sort of fodder) plant, often called Burgundy clover, lucerne, has considerable historic interest. Its Latin term, *Medicago sativa* suggests two considerations. *Medicago* refers to the fact that the plant originally came from Media, a country lying between Armenia and Assyria (imported to Greece during the Persian wars) or that it had medicinal healing properties. *Sativa* means planted or seeded; in apposition to another frequently used name of plants, *silvestris*, belonging to the forests, that is, wild growing.

Pliny, Columella, Virgil, Varro often refer to alfalfa. Amphilachus has devoted an entire book to the plant. Pliny made a statement that alfalfa requires reseeding only every thirty years. Other authors claim ten or twenty years. All ancient botanists stress the importance of the hot climate and arid soil to which the plant is partial and that it should not be planted before the month of May

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Fig. 1. Male and female adults of **Aphomia socielle** L., whose larvae are common pests of bumblebee nests in Europe and have been reported as being found in Nova Scotia and Massachusetts. (Specimens shown are from Europe through courtesy of U. S. National Museum.)

Moth Pests of Honeybee Combs

By V. G. Milum
Apiculturist at University of Illinois

(Continued from July)

Indian Meal Moth,

Plodia interpunctella (Hbn.)

This moth has a general distribution in temperate to tropical climates, the northern range being restricted to dwellings, stores, warehouses, and mills.

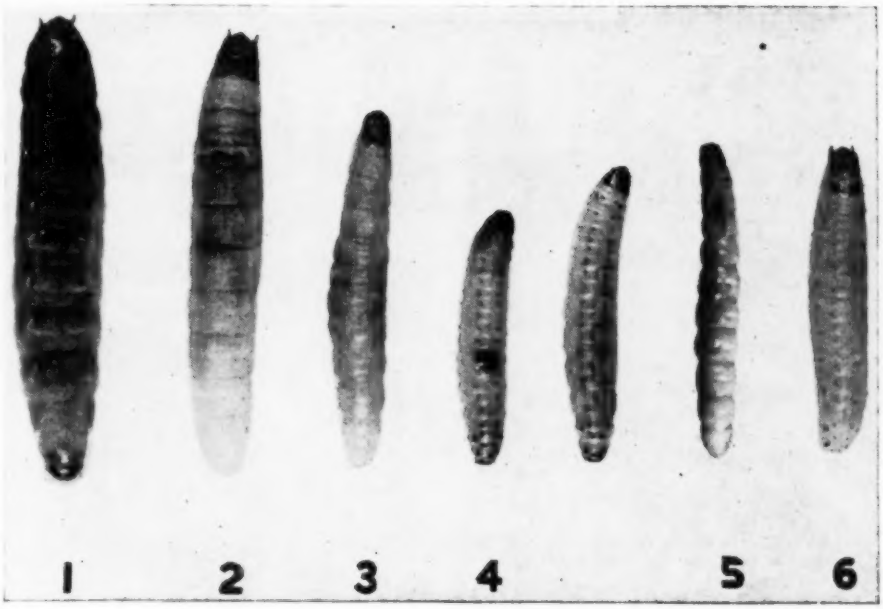
The young white larvae are active, but soon start construction of a flimsy webbing, sometimes in individual cells where they may wall themselves in with a drum-like membrane, behind which they feed and eventually pupate in flimsy cocoons or crawl away from the feeding area to cracks or crevices. Full grown larvae attain variable sizes up to ½ inch and have a solid body color of white to pink or pale creamy yellow, most commonly the latter, although sometimes greenish. The head and thoracic shields are russet; the areas about hairs (pilferous warts or plates) on the body segments are not clearly differentiated in color which distinguishes it from the three following species.

The larvae are general feeders in stored grain and cereals, dried fruits, candies with nuts, and dead insects. The females are readily attracted to combs for egg laying. The larvae develop in unmelted cappings, brood combs of honeybees either with or without pollen and honey, also combs containing dead clusters of bees. There is some evidence of injury to comb honey especially if some previous feeding on other foods containing proteins. Frison (10) has reported it as a pest of nests of bumblebees.

Pupation may be in a flimsy cocoon in the food mass but more commonly is outside of the feeding area, the full grown larvae crawling away to find cracks and crevices for pupation purposes.

The adults vary from ½ to 7/32 of an inch in length, with a wing expanse up to 4/5 of an inch. At rest, the antennae lay flat on the wings which are folded closely along the median line of the body. With newly emerged specimens, the front or base of the forewings is silver gray, separated by a narrow slightly curved black band from the tip half which is a contrasting reddish brown with patches of black mottling with gray fringe at the tip. The underwings are grayish-white, the head and thorax are reddish brown. In frayed adults, the general color is reddish brown. Adults fly principally at night or in faint light.

Considerable mating activity is evident in cultures, unmated adults copulating immediately when released together. The writer has observed egg laying as early as 8 hours after beginning of mating, all eggs being laid before 4½ days with 4 females averaging 86 eggs (71, 80, 93, 101). Some authors state that up to 350 or more eggs are laid. At 75-80°F. hatching occurred in less than 4 days. Eggs may be deposited in clusters on or in food materials, more often scattered or dropped promiscuously, not deposited in cracks and crevices. From egg to adult may require as low as 27 days.



The larvae of six species of moths which attack combs of honey bees.. 1. The greater wax moth, **Galleria mellonella** (L.). 2. The lesser wax moth, **Achroia grisella** Fabr., 3. Female larva of The Indian meal moth, **Plodia interpunctella** (Hbn.). 4. Male and female of the almond moth, **Ephestia cautella** (Walk.). The male is distinguishable by its smaller size and by the presence of a pair of dark spots, the testes which are apparent beneath the skin on the dorsal surface of the fourth abdominal segment of the older larvae. Likewise the male larvae of the codling moth may be determined as well as those of the Indian meal moth and the Mediterranean flour moth. 5. **Vitula edmandsii** (Pack.). 6. Female larva of the Mediterranean flour moth, **Ephestia keuhniella** Zell. Note: All larvae were photographed from freshly killed specimens excepting **Vitula edmandsii** which was a preserved specimen, being somewhat shrivelled with its normal spotting quite similar to that of the Mediterranean flour moth not being visible, because of discoloration by the preservative fluid. All were nearly full grown or mature larvae, thus showing the approximate relative sizes except in the case of the greater wax moth where a smaller larva was used. Thus the latter appears about two times natural size while the other five species are shown approximately three times natural size of the mature larvae.

Mediterranean Flour Moth,
Ephestia keuhniella Zell.

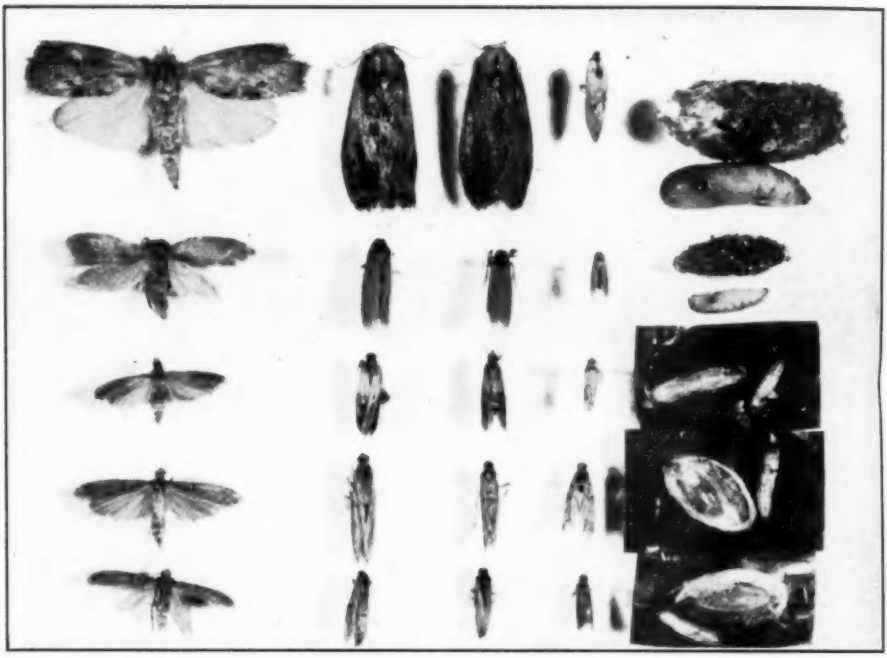
This species is commonly present in flour mills. It probably never is a serious pest of combs, being easily confused with other species.

The full grown larvae vary in size up to 3/5 of an inch in length, generally white to pink, sometimes with a yellow or greenish tinge. The dark spots around the setae on the sides and back of the body segments are distinct and comparatively smaller than those of the almond moth, *Ephestia cautella* (Walk.), but similar to *Vitula edmandsii* (Pack.). Its habits are similar to the Indian meal moth but with slightly more webbing.

The principal food of the Mediterranean flour moth is flour but it will attack whole grain and cereals, especially rolled wheat, and combs containing pollen. Attempts of the writer to rear it on brood combs without pollen or dead bodies of the parents were unsuccessful. There is probably little, if any, damage to comb honey, and rarely any on brood combs since females do not appear to be readily attracted to them. It has been reported by Davidson (6a) as a pest of bumblebee nests in California.

Pupation is within the food mass and webbing or the larvae may crawl out to cracks and crevices where flimsy cocoons are spun.

Adults are ½-¼ inch in length when at rest, with a wing expanse up to ¾-1 inch. The general color of the dorsal wing surface is light gray with two transverse narrow, zigzag or wavy darker lines; the first about ⅓ back from the front edge of the wing is more prominent, the other ⅓ from the wing tip is less distinct. In the forewings veins 4 and 5 are united. The under wings are slightly



Five species of moths whose larvae infest honeybee combs. From left to right—adult of each species with wings spread, females, males, undersized or dwarfed adults reared on reduced food supply for larvae. At extreme right, the pupal cases of cocoons and the pupae removed. From top to bottom—greater wax moth, lesser wax moth, Indian meal moth, Mediterranean flour moth, and almond moth. Note that the dwarfed greater wax moth is practically as small or smaller than the normal adults of all the other species. Moral—Do not call a small moth "a lesser wax moth".

yellowish gray with the margins distinct with fringe. They are comparatively quiet when exposed to light, although mating is observable. Transposition from one culture to another is easily accomplished by allowing adults to crawl upward on the tip of a pencil, this not being possible with any of the other species when reared in cultures.

The white, rough, slightly flattened elliptical eggs are laid in cracks or crevices, but are not tightly glued to the object. They may be thrust into food, the female apparently attempting to pack loose material around eggs with the ovipositor. A total of 175 eggs was observed from one female. It has been reported (6) that a generation requires approximately 8-9 weeks in warm weather, but the writer has reared the second generation of adults from mated females in as low as 45 days.

Almond Moth,
Ephestia cautella (Walk.)

This moth is probably quite generally distributed with its northern range restricted to dwellings and other places of storage. Farrar (7) has definitely reported it as an occasional pest of combs in Wyoming, while the writer has cultured it on combs containing pollen and such combs have been infested by egg laying of females escaping in the laboratory.

The younger larvae are white, the full grown ranging in sizes up to ½ inch, may vary from white to pink, with distinct dark pigmented spots around the setae or hairs on the sides and back of the body segments. The spots are comparatively larger according to the body size than those of the Mediterranean flour moth and the following species, *Vitula edmandsii* Pack., both of which they closely resemble.

The principal food is dried fruits, especially figs and nuts, also stored grains. On honeybee combs its habits are similar to the Mediterranean flour moth but its adults are more readily attracted to the same. Our attempts to rear on pollen free combs or in the absence of dead insects such as the parental bodies were unsuccessful.

Pupation is in a flimsy cocoon in the food mass or the larvae may crawl away into cracks and crevices. Adults vary from 3/8 to 7/32 of an inch in length when at rest. The color is somewhat brownish to dark gray with the transverse zigzag lines less distinct than those of the Mediterranean flour moth, soon becoming indistinguishable with fraying. They are night fliers but are especially active in cultures, the mating activities being readily observed. On removal of culture covers immediate attempts to escape are made, whereas the Mediterranean flour moth usually remain quietly on the food materials.

The eggs are white, round, rough and elliptical, commonly scattered over the surface of the food, with no particular attempt to deposit in the cracks and crevices. Each female usually lays from 100-150 eggs, some less, one as high as 233. A generation requires approximately four weeks.

Starting with mated females of the various species released in the same culture for egg laying, during the month of August the writer has reared the first adults of the next generation of the almond moth in 28 days, the Indian meal moth in 28 days, the Mediterranean flour moth in 45 days and the lesser wax moth in 50 days.

Vitula edmandsii **(Pack.),**
(No common name)

The larvae of this moth are commonly listed as a widespread pest of bumblebee nests. It is definitely known to be present in New York, Indiana, Illinois, Nebraska, Pennsylvania and Colorado, and no doubt many other states. It has been reported by Richmond (24) as damaging comb honey in Colorado and has been reared by the writer from discarded brood combs from Bingham, Nebraska.

The larvae are similar in size and color to the Mediterranean flour moth. The known characters for separation are not especially satisfactory. A larval setal map is given by Forbes (8).

Pupation is in a flimsy cocoon. The adults are similar in size and color to the Mediterranean flour moth, and a western species, *V. serratilinella* Rag., according to Muesebeck (22) who reports that the forewing has veins 4 and 5 stalked while in the Mediterranean flour moth they are united.

The Codling Moth.

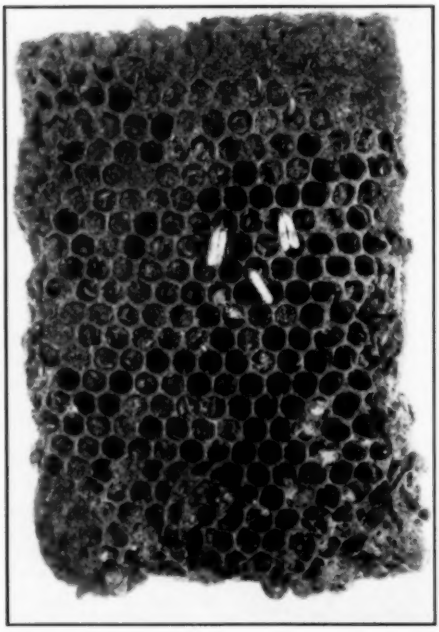
Carpocapsa pomonella **L.,**

This species is distinctly not a pest of hives or combs of bees but the larvae or pupae may occasionally be found in bee hives or combs of honeybees where the former have crawled seeking a place for pupation if the apiary is located near infested fruit trees or if infested fruit is stored in a honey-house near hives or combs. Larvae up to 3/4 of an inch are a white to pinkish color and may be confused with those of the four other species that are sometimes pink in color, except that the almond and Mediterranean flour moth larvae are definitely spotted. According to Milum and Sommerman (21) the crochets on the prolegs of the codling moth larvae are uniordinate or of equal length while with the other species listed, the crochets may be of two or three different lengths. If allowed to pupate and emerge as adults, the moths will be grayish to dark brown with a distinctly darker shiny spot over the outer 1/3 of the front wing.

Aphomia sociella **L.**

This species of moth has been reported as a common pest of bumblebee nests in Europe and as an occasional pest of honeybee combs by Suire (25). According to Forbes (8), it has been introduced to America via Nova Scotia having been found in Massachusetts by 1923. It is not improbable that some American beekeepers at a future date may find it as a pest of honeybee combs.

The writer has been unable to obtain specimens of the larva of this species. Through the courtesy and kindness of Dr. C. F. W. Muesebeck of the U. S. National Museum, single preserved specimens of a male and female were made available, these being from Europe. Although these specimens were somewhat shriveled, the female showed a body length of 1/3 of an inch with a wing expanse of 1 3/8 inches, the corresponding measurements of the male being 1/2 and 1 3/16 inches. The female is distinguishable by a pair of palps extending forward about 2 mm. or slightly more than 1/8 inch. The male specimen which was badly frayed exhibited a general reddish brown color which was also true of the female. Other features of the female visible as well in the accompanying photograph (Fig. 1.) are a circular shield of hairs extending backward from the mar-



Adults' larvae and injury of the Indian meal moth.

gin of the conspicuous compound eyes with a prominent tuft of hairs arising beneath this fringe on either side and extending backward at a slight outward angle covering the attachment of the forewings. The inner two-thirds of the forewing is reddish brown with a serrated or toothed margin where it joins the outer one-third which is a lighter brown color with a dark broken dash line paralleling at a distance of one millimeter, the outer margin which is fringed. On each front wing there appears a prominent dark spot midway laterally and one third from the front margin. The hind wings are light brown in color with the emarginating line solid, the margin fringed. The wing pattern is figured by Forbes (8). This species should not be easily confused with any of the adult moths of any other known species infesting combs.

The Bee Louse,
Braula coeca Nitzch

The bee louse is not a moth but a degenerate fly. Because the injury of the smaller larvae of the greater wax moth is often incorrectly blamed to the bee louse, it is mentioned here. Its larvae cause injury to honey by tunnelling beneath the cappings, but the larvae when found will be legless.

Dermestidae

These insects are not moths but bear the family name of a group of related beetles whose larvae may feed in dust or lint, in cereals or in brood combs containing pollen, dead larvae or bees. There is no webbing in the comb. Considerable dust-like frass accumulates together with the thin transparent skins molted by the larvae which are usually brown and hairy, and closely resemble the larvae of the common carpet beetle. The larvae may reach a length up to about $\frac{1}{4}$ of an inch. The adults up to $\frac{1}{4}$ of an inch may be a solid color of brown or black or mottled with red and various colors. The adults have a tendency to fly to windows.

LITERATURE ON WAX MOTHS[1]

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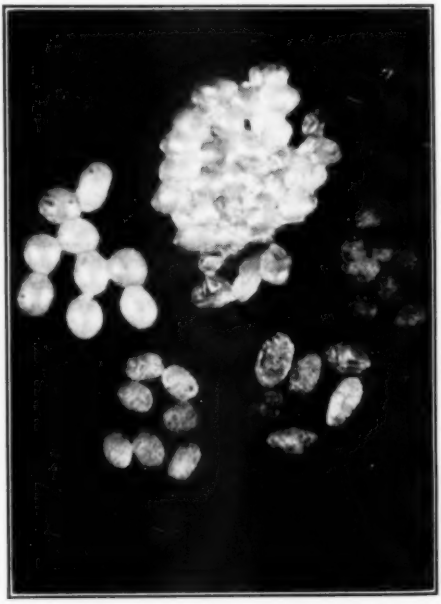
[1]Note: This list of authors is not a complete compendium of all the investigators on the subject but contains those whose writings were consulted by the writer in attempting to make the table of comparisons as complete as possible. Although the control of these insect pests is not discussed in this paper, a few references to the same are included.



Eggs of five moths whose larvae are known to infest combs of honeybees. Upper left—greater wax moth; top center—lesser wax moth; right center—Indian meal moth; lower right—Mediterranean flour moth; lower left—almond moth. (Enlarged about 7 times.)

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Mrs. Harriett Grace at Medina

On June 27 the Gleanings Editorial staff entertained Mrs. Harriett Grace, of the American Honey Institute, at Medina.

After dinner we asked two of our staff to stand up with Mrs. Grace and have their pictures taken. M. J. Deyell, left, Mrs. Harriett Grace and Miss Mildred Hobart.

Mr. Deyell, Treasurer of the American Honey Institute is also Junior Editor of Gleanings. He selects all the copy, writes some of the editorials and the Talks to Beekeepers.

Miss Hobart reads all the proofs and makes up the Gleanings pages.

Mrs. Harriett Grace (center) is head of the American Honey Institute at Madison, Wis., and a fine work she has been doing for honey and the beekeepers of the country. She is a graduate of the Wisconsin State University, a graduate in home economics, knows and works with other graduates of home economics all over the country. She has visited Europe four times, and during the last few years has specialized in honey.

Her work is set forth in the American Honey Institute pages of all the bee journals.

XUM

ps in natural flavor is this honey canned grape juice.

Canning Continued

By Mrs. Benj. Nielsen

At this time of the year nature challenges every housewifely instinct to begin making preparations for well-stocked shelves of home-canned products. Like all other good things we realize this parade of delicious summer fruits won't last forever. So up come the jars from the cellar and we keep an alert eye for cracks, out-of-kelter wire sealers, dented lid rims and chipped jar necks—all of which may prevent the perfect seal necessary to keep our canned goods. We invest in new jar rings and perhaps a few new lids to replace those doubtful ones.

Now is a good time to check on the spice supplies to see that they are adequate and in good condition. Delicacies will be no better than the spice that goes into them. To insure truly luxurious spiciness it's a good idea to discard those spices that have been exposed to the air, or have been on the shelves for a year or so, and invest in a small stock of strictly fresh ones.

We bring out the old recipes, resolving to try a few new kinks too, then see that there's plenty of honey on hand, and we're off! Luscious peaches, succulent pears, flaming tomatoes, dark mysterious grapes—we're off on a canning spree!

If you have not used honey in canning and preserving you have missed some real taste treats. When two of Nature's finest natural products join hands you can expect fine results. Fruits canned in honey syrup develop an unusually fine flavor and have a sparkling color. It is difficult to give specific, or hard and fast rules for making the syrup. In arriving at pleasing proportions it is well to remember that, cup for cup, honey is sweeter than the ordinary granulated sugar generally used in canning, and that the honey flavor is intensified with time. The quantity of honey used will vary with the kind of fruit to be canned; more honey may be used satisfactorily with the tart fruits. If a thick, very sweet syrup is liked more honey may be used. And here's a tip—just in case you don't know: In any kind of honey canning be sure to use a large kettle. 'Twill save time, temper, and a lot of unpleasant cleaning up. Honey has a tendency to foam and trying to work with small utensils is to invite trouble in short order—it foams (usually when your back is turned) ascends the sides in a twinkling and out goes your burner—all before you can say "Jack Robinson".

We all know that doctors advise the drinking of fruit juices during many illnesses and through convalesence. Granted that's sound advice, wouldn't it be even wiser to drink these health-giving juices regularly and keep well? Indeed it would! Fruit juices are valuable in the diet, largely for two well-known properties. Practically all of them are rich in mineral elements, chief of which are calcium, magnesium, potassium and sodium; and many juices contain vitamin C. Then add honey for easy assimilation, quick energy (with no deleterious after effects) to say nothing of the excellent flavor and you really have something there! So let's plan on canning lots of the juices.

Juice from ripe fruit is superior in quality to that obtained from immature fruits. To preserve the fine flavor of the ripe fruit, the juice should be pressed from cooked fruit which has been simmered, not boiled, then processed in a hot water bath, at a temperature below the boiling point—usually 180 degrees F. A reliable and inexpensive dairy thermometer can be purchased at dime, hardware, or drug stores for less than $1.00.

Honey-Canned Fruit Juices

Select sound, ripe fruit. Wash and drain thoroughly, then crush and heat slowly to the simmering point—not boiling, please. Strain through a double thickness of cheesecloth. (I like to use a jelly bag.) Let stand in a cool place for several hours to allow the sediment to settle to the bottom. Then pour off the juice being

XUM

careful that no dregs slip in. Sweeten to taste with honey which has been warmed to facilitate mixing. Pour into freshly sterilized jars or bottles, partially seal and process in a water bath, at simmering temperature for 30 minutes, counting the time when the water begins to simmer. Remove from bath and seal at once.

Here's a deluxe version of:

Honey Grape Juice

Wash fully ripened grapes. Drain well. Add one 8-ounce cup of water for each gallon of grapes. Place pan over container of hot water and steam until grapes are tender. Pour into jelly bag and let drip overnight. Pour off the clear juice from the sediment. Add 1 cup of warmed honey to each gallon of juice. Pour into freshly sterilized bottles or jars. Partially seal. Place on rack in boiler or canner, add cold water until it comes up almost half way on the containers. Bring gradually to the simmering point and simmer 30 minutes. Complete seal. If bottles are used, cork at once and when cool dip into sealing wax, or melted paraffin.

The following method produces a juice, the flavor of which is the nearest approach to that of the fresh juice we have yet found.

Wash and stem fully ripened, sound grapes, being careful not to mash. Place 1 cup of grapes and ¾ to 1 cup of warmed honey in a hot, freshly sterilized quart jar. Fill jar to overflowing with boiling water. Seal at once. Invert, then stand upright, repeating this process frequently to insure dissolving and mixing of the honey. When cool wrap each jar in brown paper (paper bags are handy) or store in a dark closet. Avoid sunlight which will cause grapes to turn an undesirable bluish color and develop a flat taste. Juice will be ready for use in two to three weeks.

Fruit salad is a delicacy we like to have on hand. It tops the list for an emergency salad and is a real boon in preparing company desserts "in the twinkling of an eye" so to speak, when unexpected guests arrive. The following recipe makes about 16 quarts for an expenditure of about half the cost should one buy this amount.

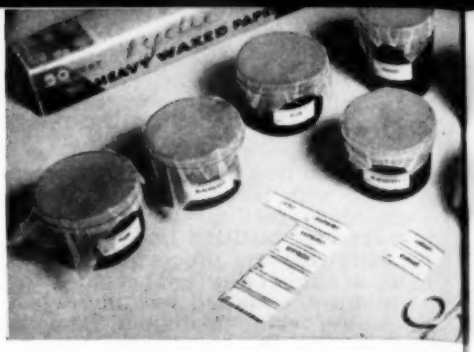
Canning Fruit Salad

Use 3 dozen fresh peaches, 3 dozen fresh pears, 1 gallon can of broken slice pineapple, 1 gallon can of apricots, honey maraschino cherries, (you will find the recipe for these in the December 1936 issue of Gleanings, also in the cookery section of the 1940 edition of A B C and X Y Z of Bee Culture) and a medium honey syrup, or one to suit the taste. The proportions of the syrup may vary to suit personal taste. Two cups of honey to three cups of water is a pleasing proportion.

Peel and quarter the peaches and pears. Pack a variety of the fruits in sterilized jars, adding a number of maraschino cherries to each jar. Fill the jars with the honey syrup. Adjust lids according to the type used and process in water bath for 20 minutes, beginning to count the time when the water begins to boil. Remove from bath and complete seal at once. Cool completely and store in a dark place to preserve colors of the fruits.

The open kettle method may be used, but the fruit remains firmer and more attractive-looking when the cold pack method is used. If you wish to can a few quarts for fruit cocktails the fruit should be diced. Serve thoroughly chilled. You will be delighted with the flavor.

Flavorful honey canned fruit salad makes a grand emergency salad.



Delicious honey jellies already to be stored away to await hot biscuits and golden honey muffins.

Honey Pickled Peaches

One-half peck ripe peaches, 1½ pounds (1 pint) honey, 1 pint vinegar, 1 ounce stick cinnamon and whole cloves. Combine honey, vinegar and cinnamon. Bring slowly to the boiling point and boil gently for 10 minutes. Meanwhile, dip peaches in hot water and slip off the skins. Stick 3 whole cloves in each peach. Place half of the peaches in the boiling syrup. Keep remainder in water to prevent discoloration. Cook until the fruit is soft but still retains its shape. Pack in sterilized jars. Cook remaining peaches in the same syrup. Pour syrup over packed peaches and seal.

Rapid cooking is the secret of the bright red color of this

Tomato Ketchup

One-half peck tomatoes (use fully ripe ones), 2 medium-sized onions, thinly sliced, 3 red peppers, 2 tablespoons salt, 2 teaspoons celery salt, 2 teaspoons ground mustard, 1 tablespoon whole allspice, 1 teaspoon cloves, 1 tablespoon cinnamon, 1 teaspoon paprika, ⅓ cup honey and 1 pint vinegar.

Quarter tomatoes. Combine with onions and pepper and cook together until soft. Press mixture through a sieve and measure the pulp. This should measure 4 quarts. Add salt and spices. Place whole spices in a bag during the cooking and remove before pouring ketchup into bottles. Cook rapidly for 1 hour. Add the honey and vinegar and cook until the mixture is thick. Pour into sterilized bottles or jars and seal at once.

Spiced Plum Butter

Wash plums, cover with cold water and cook over low fire until soft. Run through a sieve. Measure the pulp and add ½ cup of honey to each cup of pulp. To each four cups of pulp allow ½ teaspoon of whole cloves and 1 stick of cinnamon bark, broken into small pieces. Place the spices in a cheesecloth bag during the cooking and remove before pouring the butter in jars. Cook the mixture slowly until thick and clear. Pour into sterilized jars. Seal.

Rose-Apple Jelly

Four cups of juice, 4 cups of honey, juice of 1 lemon, rose geranium leaves, and 1 box of powdered pectin, Penjel or Sure-Jell.

Remove stem and blossom ends from 4 pounds of apples and cut in small pieces. Add 3 cups of water and the rose geranium leaves. Simmer gently until tender enough to crush easily. Mash well and simmer 5 minutes longer. Strain. Add lemon juice and measure. Add dry pectin, stirring vigorously. Place over heat and bring to boiling point. Add honey, bring to boil again and boil hard 3 minutes. Remove from fire, skim and pour into freshly sterilized glasses, in the bottom of which a fresh rose geranium leaf has been placed.

Harlequin Marmalade

Two dozen fresh peaches, 1 dozen fresh red plums, 1½ pounds seedless green grapes, 1 No. 2 can crushed pineapple, 1 orange, 1 lemon, honey, and ¼ pound of nutmeats, chopped.

Wash fruits well and drain thoroughly. Pare and cut into small pieces the peaches and plums. Chop grapes. Slice orange and lemon very thin, without paring, then cut into small pieces. Combine all fruits and cook until tender. Measure and allow ⅔ cup of honey for each cup of fruit. Cook gently for 20 minutes. Then add nutmeats. Almonds, pecans or walnuts are preferred. Continue cooking until marmalade is thick and clear.

Green Tomato Pickles

Three pounds small green tomatoes, 2 pounds crushed pineapple, 2 pounds sugar, 4 cups honey vinegar or mild cider vinegar, 1 cup mildly flavored honey, 1 cup pineapple juice, a little mace, 1 teaspoon stick cinnamon, 1 tablespoon allspice, 1 tablespoon whole cloves, 2 tablespoons yellow mustard seed.

Cut tomatoes in thick slices; add pineapple. Mix sugar, vinegar, honey and pineapple juice; add spices tied in a thin bag. Bring to boiling point and pour over the tomato and pineapple mixture. Cook until tender and clear. Pour into sterilized jars. Boil syrup down, slowly, until thick enough to coat a spoon. Pour over the tomato and pineapple mixture packed in the jars. Fill to overflowing. Seal.

XUM

Beekeeping in India

P. R. Muttoo

The credit for making the first serious attempt to introduce the movable-frame hive and modern beekeeping methods into India, must, forever, rest with that noble-hearted Englishman, Mr. John Douglas, of the Telegram Department, Government of India, who, in 1881, wrote to the Secretary of State for India, pleading for the introduction of modern beekeeping into this country, and followed up his request by a personal visit to England on leave to personally persuade the authorities. He obtained a direction from the Secretary of State for India, and inquiries were conducted by the heads of the various Provinces and States in India, the result being published by the Government of India as "A Collection of Papers on Beekeeping in India" in 1883. Although no practical steps were taken by the Government to start beekeeping, these inquiries did stimulate interest and revealed that even at that remote period, there were present in India isolated individuals keeping bees in the modern way. Mr. Douglas also wrote a book in which a forceful plea was made for beekeeping.

It is Father Newton of Trichinopoly, S. I., to whom goes the credit for successfully introducing practical modern beekeeping into this country. He invented the Newton hive which is used almost exclusively throughout Southern India, and by demonstrations and lectures tried to popularize the industry.

To Travancore State belongs the credit of being the first State in India to take up beekeeping officially. Being near to Father Newton's sphere of activity, the State very early decided to take up beekeeping. The first attempt to start beekeeping was made as early as 1904 but it was a failure. The State then appointed Mr. C. R. Thompson as its Bee Expert in 1917, and to him belongs the credit of successfully establishing beekeeping in Travancore. Later the Mysore State and the Government of Madras took up beekeeping, and their agricultural Departments deserve credit for popularizing the industry by starting training centers and issuing reliable literature. "Beekeeping in South India", a publication of the Madras Government deserves special mention.

While all this activity was going on at some centers in the South, there was hardly any activity in the rest of India. An attempt was made by Mr. F. S. Cousins in the Punjab who actually formed an Association in Simia in 1913 with a monthly journal the "Beekeepers' Record" but the attempt was short-lived and the whole incident soon forgotten.

The Government of India, or rather the Imperial Council of Agricultural Research, conducted experiments in apiculture under the direction of the Imperial Entomologist, and the result was the publication of a Bulletin entitled "Beekeeping" which has proved a useful guide.

The credit for making the first practical attempt to introduce beekeeping in Northern India, goes to Mr. F. L. Brayne, I. C. S., Commissioner, Rural Reconstruction, Punjab, who, in 1936, persuaded the Punjab Government to start two experimental bee farms in the Kangra District, Punjab. These Farms were first put in charge of a Russian refugee who had had practical experience on beekeeping in his own country, but now they are in charge of Mr. Sardar Singh, who visited America and Europe, where he made a close study of the working of modern bee farms.

During the last two years we have been carrying on, as is now well-known, a ceaseless India-wide propaganda for the advancement of beekeeping in India, and we are happy at the success which has attended our efforts. In October of 1938, the U. P. Government acquired our hive-making workshop and started an apiary at Jeolikote under the direction of our proprietor, Mr. R. N. Muttoo. The credit for this achievement rests with Mr. M. D. Chaturvedi, I. F. S., Rural Development Officer, U. P.

With the coming into existence of the All India Beekeepers' Association, and the Indian Bee Journal, beekeeping in India enters a new phase. Well-wishers of the progress of beekeeping in India cannot do better than support this Association, which promises to raise the standard of beekeeping in the country.

Jeolikote, Dist. Nainital, India.

From the Field of Experience

ERADICATION—A FALLACY

By Geo. W. Bohne

Corrective Measures Often Too Drastic

In the course of our long lifetime, we have seen so many scientific schemes come to naught—and forgotten—that we are unduly suspicious when the "ballyhoo" starts concerning something new and wonderful. The word "eradication" finds us unreceptive and suspicious. In our many years of agricultural activity we have taken active part in a few, and observed many, campaigns for the eradication of insect pests, and our private opinion always was that they were "more show-ey than conclusive".

They Are Still With Us

In many instances practical control has been effected but there are no "satisfactory" data to prove that man has ever really eradicated any insect pest. The codling moth, boll weevil, San Jose scale, Hessian fly—and many other crop pests have been the targets for our eradication programs. They are all now under reasonable control—but they are still with us.

The point which never seems to be brought into prominence is that insect pests seem to come—and go—in cycles. Nature seems to have the cure for the "nuisances" which she periodically produces. Several personal experiences seem to prove this point. We have seen early planted corn "wiped out" by "earworms". No control was attempted as the cost for chemicals and labor would amount to more than the value of the crop—but a replanting was uninjured—the pests had disappeared. On another occasion "turnip lice" became so plentiful and destructive in the territory which we were working, that for a period of several years our farmers were unable to produce marketable turnips. Dusting and spraying operations seemed so ineffective that the farmers were advised to "forget" turnips and devote themselves to other crops. Of course, we blamed the failure of control measures on those farmers who did not take part in the dusting operations. In the end the usual thing happened—the infestation almost disappeared and the farmers went back to turnip raising.

The Army Worm

Probably the most exciting episode in our agricultural career was connected with the "army worm". Accounts of their march and depredations was "front page" news. They seemed to cover the earth and green fields were passed over in a night—leaving nothing but blackened stalks behind. It was a weird experience to step outside in the "still of the night" and listen to the spooky "crunch-crunch" of myriads of tiny jaws destroying a cotton crop—a quarter of a mile away. They were poisoned, burned, crushed, and drowned while crossing streams, trenches were dug ahead to protect fields not yet invaded—but they came along—losing billions on the way—then "pouf" they were gone—and a true army worm is something of a rarity. He is still here, but until some unknown natural condition again makes his kind numerous, he is under control.

Airplane Poisoning

We would not detract from the value of scientific control measures but we often think that the methods advocated—and used—are ill advised, and extreme. We do not burn down the house to get rid of the few fleas which the dog leaves on the living room rug. Burning the rug is already drastic—burning the house causes unnecessary collateral damage—and this collateral damage is what seems to make the best "headlines" and reflect the "wisdom" of the advocates of the prescribed remedy. Airplane poisoning is an example of how corrective measures can be over-applied. Drifting poisons make the pasture lands of neighboring stockmen unsafe or even dangerous—and this punishment is inflicted in the name of progress.

The White Fringed Beetle

We have an example of this in the States bordering on the Gulf of Mexico, where the white-fringed beetle eradication program is now being carried on. In our state the infested territory is a dairying section and these men have had untold damage done to their pasturage. Beekeepers have also suffered heavily—but they managed to get some compensation

for their COLLATERAL damage. This is a step in the right direction. Full payment for innocent sufferers seems to be one method of making such campaigns follow more conservative lines.

The opportuneness of these campaigns is often a matter for the layman's wonderment. It is admitted that this white fringed pest has, as yet, caused little—if any—damage, and that the present measures are in the nature of "preventive control". This puzzles the writer as he played with such beetles more than sixty years ago—same being found on the grass plats of the New Orleans parkways. This is not just a distortion of childish fancy, as our interest in insect life was encouraged by an uncle, an ardent student of entomology, whose collection of insects was of such magnitude that it eventually found its way to the Tulane University Museum—where it now can be found.

While "we, the people" still have some voice in government we should demand payment for these collateral damages caused by bureaucratic control excesses.

Luling, La.

[We are glad to note that the white fringed beetle referred to on page 369, June Gleanings, has done little damage so far. If it, like other insect pests, goes in cycles the danger will soon be over. However, it is wise to be on the watch. Every reasonable measure should be used to keep it under control having in mind the rights of others.—Editor.]

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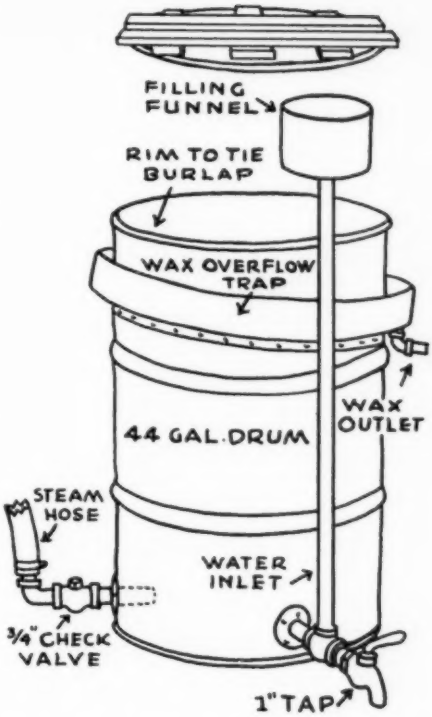
DUNSTAN WAX MELTER

By P. Stephens

We have been trying out a new type of wax melter suitable for dry cappings, old combs, etc. The method was worked out by a fellow apiarist and in my opinion is the best and quickest way known as no press is used. It is known as the Dunstan wax melter. During a recent field day held at our apiary ours was a source of envy to many commercial beekeepers.

The cost of making one of these is small and it is simple enough for beekeepers to make their own. The following is an outline of making and working.

Ours is a 44-gallon steel petrol drum with a rim from which we cut out the top. An overflow channel is made of 24 gauge galvanized iron which is riveted and soldered to the drum with a 2-inch slope to an outlet pipe for wax. This is a piece



of 1-inch bend. A one-inch hole is put in the drum for the water pipe to which an upright pipe is connected and a filling funnel. A ¾-inch hole for steam is connected with a ¾-inch check valve and a reducing elbow to fit on the steam hose.

Water is placed in the drum till steam and water outlet holes are covered, then filled with wax to be melted. Steam is turned on slowly and the overflow can be checked by the use of the water tap to let out water as necessary. When contents are well melted a piece of burlap is tied down firmly over the rim and the steam turned off. Hot water is then poured down the funnel till the wax commences to overflow. It strains through the burlap and overflows down the drum into the channel which slopes to the outlet. It is then caught into moulds as required. The strainer bag is liable to blow off if too much water is poured into the funnel but we avoid this by nailing about 5 pieces of wood together and fitting over the bag and inside the rim of the drum. This is held down by a weight or tied with wire.

Inverell, N. S. W., Aus.

Attractive and interesting to all passers-by.

CURIOSITY CATCHES CUSTOMERS

By L. H. Sweetser

A singular observation hive, lettered with the curious device "California Honey Tree", stands in plain view from the transcontinental highway near Monrovia, California. It is at the Mayer and Sons honey booth described in September, 1938, Gleanings. Joe Mayer, garbed in his bottling garments, is shown holding up the cover to disclose busy bee workers at their tasks.

The Mayers have used many contraptions for attracting custom, and this is one of the more noticeable. Inquisitive visitors, curious as to what constitutes a "honey tree", stop at the big wayside honey booth and investigate. They then wander about the grounds where they inspect the artistic arrangement of honey and honey products in dainty containers. They see the 1911 Autocar, the first truck used by the Mayers to transport colonies, even now hooked up to a circular saw and used from time to time to saw stove wood.

They listen to Joe Mayer as he explains the fascinating activities of working honeybees in this glass-front observation hive. As will be seen, there is a "corridor", about 5 feet long, extending from this observation hive to the roof eaves. This is for entrance and exit of the bees, and to keep them away from nervous visitors. Travelers find much to interest them and before they leave they frequently become customers, some of them permanent as the Mayers ship their product all over the world.

The other picture reminds us of the natural tendency that causes the offspring of beekeepers to follow the vocation of their parents. It is Paul Anthony Mayer, two years and seven months old, son of Joe Mayer, attending to his duties as an embryo keeper of the bees.

A visit to the Mayer establishment always is fruitful of some sort of beeland lore. A traveler showed us some snap-shots of a honeybee impaled on the barb of a barbed-wire fence. The taker of the picture explained that when getting through a fence he saw this unfortunate bee, quite dead. The insect was in direct line from an apiary to a desert watering place, on the California edge of Death Valley. The poor bee had not been fastened onto the barb by some bluejay or butcher bird, as the barb had pierced directly through the center of its head into the thorax. She must have been flying at a tremendous rate, to impale herself so completely and no doubt passed into bee heaven without a struggle!

North Hollywood, Calif.

A beekeeper in the making.

NOT AN INCREASE IN ALFALFA IN THE IRRIGATED REGIONS OF THE SOUTHWEST

By Lee H. Watkins

With all due respect to the Senior Editor and his editorial in Gleanings for February 1940, page 97, I fear that he forgot to discount the statements made by the native Californians, who, perhaps because of the influence of Los Angeles Chamber of Commerce, are noted for their ability to brag about their wonderful state of the golden West. On page 95, fifth paragraph, the Senior Editor makes a statement which is much closer to the true situation in California, when he says "The colony averages are not large and the seasons are not always above fair".

There is little indication that California will increase its alfalfa acreage to any great extent in the near future. The tendency now is toward a rapidly increasing acreage in fruits, vegetables, grapes, and melons, certainly not alfalfa. Furthermore, the alfalfa acreage in California has actually **decreased,** not increased, in the past ten years. The statistics for 1937 (the latest available) give the number of acres of alfalfa in California at 688,000. In 1919, there were 718,515 acres, in 1929, there were 794,946 acres, while the average acreage from 1927 to 1936 inclusive was 773,000 acres. This does not look like an increase of ten acres to every one in the past ten years.

Even if the alfalfa acreage of the state were increased ten times it would be of little benefit to the beekeeper; because the present practice of the hay farmer is to cut his alfalfa before it blooms. It has been fairly well proven that alfalfa contains its greatest leaf area before it blooms, and that the leaves contain much more food value than the stalks. Since practically all the alfalfa grown in California is for dairy feed there are relatively few acres that are ever allowed to bloom. Since the leaves stick much better to young alfalfa practically all of it that is baled never saw a bloom.

California is a poor state for seed alfalfa having an average of only 14,850 acres left for the seed during the period of 1927 to 1936, while in the same period Ohio averaged 18,062 acres and Nebraska led all the states with 43,900 acres. It is only when alfalfa is allowed to bloom and bloom, that it produces large surpluses of honey. Most of the beekeepers in the San Joaquin valley are thankful if their bees collect sufficient honey from the alfalfa during July and August to build up on for the fall honey flow.

A large percentage of the so-called alfalfa honey sold in California is not strictly alfalfa honey at all. The term is used loosely and usually includes practically all of the various valley honeys when they contain some alfalfa. It is seldom that we any longer get pure alfalfa honey though we, like most of the beekeepers in the San Joaquin valley, spend a large part of our time in transporting bees to possible bee forage, wherever it might be in the state. With cheap honey, only fair crops, and the high costs of migratory beekeeping any of the beekeepers are near bankruptcy, and some are all ready on the relief rolls.

Selma, California.

[We have several times cautioned our readers against moving bees into territory already occupied without making a preliminary trip. If one must move on account of health, often he can buy out someone else. The purchase price covers the bee range. See black-faced type on page 376, last issue.

Only a few of the big irrigation ditches from the big dams, have been completed. The All-American Canal from the Boulder Dam (see pages 375 and 376, last issue) is not yet in operation. The construction of other ditches have only just begun. Some of the big dams are still in the process of building.

It will be ten and perhaps fifteen years before new territory for irrigation will be available. At that time, there will be more cotton, more alfalfa, more citrus groves in evidence. It is the **future** not the **present** (see page 97, February) that will provide new bee pasturage. Just now, we know of no territory that will warrant the moving of bees from the Dust Bowl of the Middle West, to the irrigation areas of Southern California and Arizona.

Already there are too many stranded farmers from the Dust Bowl of Kansas and Nebraska and in California. The book "Grapes of Wrath"—while it presents an exaggerated picture of stranded farmers and their families, tells some things that are too true.

So we say, don't move bag and baggage until you have made an advance trip to see whether you will jump from the frying pan into the fire.—Ed.]

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KINGBIRDS

By John Conner

Much has been written and a great deal more has been said with reference to kingbirds being a menace to the beekeeper. Being a true flycatcher, and therefore taking a large part of its diet on the wing, would easily cause a bad opinion to be formed of it by beekeepers. Almost

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without exception the usual opinion expressed by beekeepers is against the kingbird, yet there is very little definite factual evidence in support of this common belief.

It might be of interest to all beekeepers if something in favor of the eastern kingbird (*Tyrannus Tyrannus*) could be presented, especially if this testimony is of a substantial nature. The following has been selected from Farmers' Bulletin 630 "Some Common Birds Useful to the Farmer". Readers can form their own opinion.

"The chief complaint against the species by both professional beekeepers and others has been that it preys largely upon honeybees. One bee raiser in Iowa, suspecting the kingbirds of feeding upon his bees, shot a number near his hives; but when the stomachs of the birds were examined by an expert entomologist, not a trace of honeybees could be found.

"An examination of 665 stomachs collected in various parts of the country was made by the Biological Survey, but only 22 were found to contain remains of honeybees. In these 22 stomachs there were in all 61 honeybees, of which 51 were drones, 8 were certainly workers, and the remaining 2 were too badly broken to be further identified."

This same bulletin also has this to say of the Arkansas kingbird (*Tyrannus verticalis*) whose habitat is the Western States. "In an examination of 62 stomachs of this species, great care was taken to identify every insect or fragment that had any resemblance to a honeybee; as a result, 30 honeybees were identified, of which 29 were males or drones and 1 a worker. These were contained in four stomachs, and were the sole contents of three; in the fourth they constituted 99% of the food. It is evident that the bee-eating habit is only occasonal and accidental, rather than habitual; and it is also evident that if this ratio of drones to workers were maintained, the bird would be of more benefit than harm to the apiary.

"Three points seem to be clearly established in regard to the food of the kingbirds—(1) that about 90% consists of insects, mostly injurious species; (2) that the alleged habit of preying upon honeybees is much less prevalent than has been supposed, and probably does not result in any great damage; and (3), that the vegetable food consists almost entirely of wild fruits which have no economic value".

The foregoing might be classed as negative advantages. What might be classed as a positive advantage in favor of the eastern kingbird in particular is its hostility to crows and hawks. A family of kingbirds nesting near the vicinity of a poultry yard is a valuable means of controlling the depredations of hawks. As so many of the smaller eastern beekeepers have poultry also it is entirely possible that in the aggregate the kingbirds are of far more benefit than harm to the beekeeping industry.

Caldwell, N. J.

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SECOND GLANCES

By C. M. Isaacson

"Ideas make prices." This statement in Percy H. Wright's article (page 417) certainly was borne out during the—should I say, sale, of our short crop of last year. The idea that large amounts of honey had been carried over from the preceding year, plus low consumer buying power, surely made havoc with the market. The article gives some valuable aids to the situation, if they can be attained.

H. H. Root's suggestions about extracting may be old, as the title of his article says (page 420), but they are well worth repeating. His caution against excess moisture while extracting is one to take note of, and I also like the truth he gives in the last paragraph. It could well be framed and hung in every honey-house. "Honey is the purest and safest sweet. Producers, everywhere, should jealously guard its good reputation."

Present day beekeeping has largely eliminated the damages from wax moths, what with better and more vigorous strains of bees and stronger colonies, but the article on page 424 is interesting none the less—especially, as Mr. Milum says, in localities where moths are numerous and unguarded equipment may suffer. It effectively sets right several erroneous ideas long held, and any correction of untruths is of value.

Mrs. Nielsen evidently has an inexhaustible fund of honey recipes, for which every beekeeper should thank her. Even if they were used only once by all the cooks among Gleanings' readers, it would require lots of honey.

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It gives one a feeling of pride to read of people like Julian Joubert and his wife, to feel that among our fellow Americans are individuals who can conquer real adversities and still keep smiling. Beekeeping needs them and many more of their kind (page 432).

Every now and then the columns of Gleanings contain a little "idea" that has value far beyond its looks. The suggestion of inserts containing interesting material about honey to be included in each pack, should do a lot towards increasing sales. The American Honey Institute's leaflet for five-pound pails should be ideal for this purpose, and each beekeeper could include a personal message of his own, as Mr. Ward describes (page 434).

Mr. Latham's articles are invariably good ones—they always invoke comment, even though it is often opposition. The gist of his article on page 435 seems to be that if your hives are properly insulated, you may paint them black; if not, they should be white. He fails to state definitely whether he considers a black, insulated (double-walled) hive superior to a similar one painted white. If one must make hives double-walled in order to have them an unconventional color, why do so at all unless they are really superior to white ones of the **same type?** His contention that a white hive in the shade on a torrid day is "unsufferably hot for the bees" (presumably in comparison to a black one) will be disputed by many—my own experience decidedly does **not** show this to be the case.

Any method which gives promise of more nearly perfect queen introduction is worthy of trial. The plan given on page 436 embodies the well-known principle of getting the queen laying before the bees reach her so should give a high percentage of success.

The short piece on beeswax (page 437) shows the need of care in preparing it for market. Scrapings and brood combs should evidently be rendered separately if one wishes the highest quality product.

That 5c maximum price for honey **might** be satisfactory if it was also the minimum (editorial, page 441). Lowered production costs would be of little avail, however, if the price went to a 2 or 3c level instead of the 5c mentioned.

Together with resistant strains, burning is proving to be the only real solution for A F B (page 443). It is the old truth of taking a painful loss at the moment to avoid a more serious one later.

Mr. Root's clear pictures and accompanying text (page 444) give us a good idea of conditions in much of Arizona. The advantage of little depreciation of equipment when left outdoors seems to be balanced by the extreme heat that the beekeeper there has to contend with. It seems that there are very few perfect spots —which helps to make us satisfied where we are.

That is a handy practice suggested by Editor Deyell in his Talks to Beekeepers (page 457)—using a hive weight to indicate general colony condition. A beekeeper I worked with a few years ago used this method, and it did make it a lot easier to find colonies needing attention.

I was naturally disappointed in not seeing J. L. Byer's always worthwhile contribution to Gleanings in July, but his substitute was very acceptable. We all echo the Editor's sentiments (page 454).

Middle River, Minnesota.

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COLONY KNOCKED OFF ITS STAND LIVES

By M. J. Deyell

As I visited some of the Root Co. out apiaries yesterday, April 1, 1940, I found a two-story colony tipped over on its side. It looked as though some one had pushed it over. The apiary is surrounded by a wire hog-proof fence to keep animals out.

When preparing colonies for winter we practice stapling the hive bottoms securely on the brood chambers, also stapling the two brood chambers together, then fastening the telescope hive covers on by using two eight-penny nails, one on each side of each cover.

The bees were flying from this hive on its side and seemed none the worse for their experience. I simply placed the hive right-side-up on its stand.

The point to keep in mind is that it pays to have hive parts securely fastened together, especially during the winter. If the hive parts in question had not been properly fastened together the colony would have perished.

Medina, Ohio.

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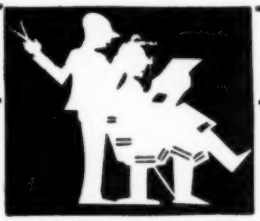
Just News



The annual meeting and summer picnic of the Empire State Honey Producers' Association will be held at the home of Adams & Myers, at Ransomville, N. Y., on August 17, with the Western New York Beekeepers' Association acting as hosts. This is the one big summer meeting of New York State and all beekeepers, their families and friends are invited. We understand that refreshments will be furnished free and no doubt arrangements will be made to take care of lunches for those beekeepers who find it inconvenient to bring their lunches with them. We are expecting some prominent visitors from other states. Adams & Myers have a nice lake on their property and there will be facilities for swimming. Come and enjoy a good time.—E. T. Cary, Sec. Empire State Honey Prod. Asso.

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Pennsylvania State Beekeepers' picnic and field day will be held August 17, 1940, at Idlewild Park, Ligonier, Pennsylvania.

Morning 9:30-12:00
(Standard Time)

Presiding—Elmer F. Reustle, President, Philadelphia, Pa.

Registration and Acquaintance Hour.

Address of Welcome—David Lauffer, Pres. Westmoreland County Beekeepers' Assn.

Response—Thos. A. Berkey, Vice President, Easton, Pa.

Demonstration, Transferring Bees from Box Hive to Standard Hive—E. J. Anderson, Extension Apiarist, State College, Pa.

Care of Comb Honey—E. J. Anderson.

Beekeepers Get Together—J. S. Fleck, Pittsburgh, Pa.

Address—Hon. John H. Light, Secretary of Agriculture, Harrisburg, Pa.

Our Present Plan of Apiary Inspection—H. B. Kirk, Acting Apiculturist, Harrisburg, Pa.

Discussion and Roll Call of Counties.

Basket Lunch 12:00-1:00

(Lemonade and coffee will be served by the Westmoreland County Beekeepers' Association.)

Afternoon 1:00-2:30

Honey in the Menu—Miss Gladys Breneman, Director of Home Economics Westmoreland County.

Dialogue, "A Cheerful Caller"—Mrs. H. M. Snavely and Mrs. F. W. Boldosser, Carlisle, Pa.

Recitation, "Nothin' to Laugh At"—Miss Anne Treager, Greensburg, Pa.

Address, Prof. Charles F. Maxwell, Supt. of Schools, Westmoreland County.

Greetings from Visitors, Supply Companies, etc.

Games and Contests 2:30

Games and contests will be in charge of E. J. Anderson and W. L. Treager, County Agent. Prizes awarded are the donations from various Supply Companies and Dealers.

Bring your friends, your family, your lunch, and don't forget your bee smoker for the contests. Come early and enjoy the day with us.

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Young fellows who like to give their best girls a box of candy, should be informed of the virtues of the Nellie Stratton Sweets, candies made mainly of honey. These candies are put out by Honey Products, Inc., 115 Market Street, Youngstown, Ohio, and have been on the market for a number of years. They have now reached the highest point of perfection; both from the standpoint of health-giving qualities and of being a confection that does not cause dental decay.

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The August meeting of the Middlesex County Beekeepers' Association will be at 2 P. M. on Saturday, the 31st, at the residence of Mr. and Mrs. Ellis F. Colgate, Concord Road, Billerica, Mass. Dr. Burton N. Gates, Chief Apiary Inspector for Massachusetts will speak on the inspection service work. Hives will be opened. The Ladies' Auxiliary will serve supper featuring meat loaf, vegetable salad with dressing made with honey, sweet corn, blueberry pies made with honey, ice cream and coffee. Please bring your plate, cup and silver.—A. M. Southwick, Pres.

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The summer meeting of the Kansas State Beekeepers' Association will be held at Independence, Kans., August 11. A good program has been arranged. Come and bring your lunch to the City Park, where we will talk over our problems, and have a good social time together.—W. N. Cline, Secy-Treas.

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The Montgomery County Association will meet August 3 at the farm of Walter Rhodes, two and a half miles southwest of Brookville, Ohio, on Tom's Run Road at 11:30 a. m. for basket dinner followed by a good program.

(Continued on page 528)

Editorials

Will it Be a Light or Bumper Crop of Honey

The heavy rains throughout spring and early summer may mean a bumper crop in many localities in the white and alsike clover belt of the East, and they may mean only a light crop elsewhere. The yield came late and if precipitation continues, clover may continue to yield up into the middle of August when white sweet clover and alfalfa may start.

Were it not for the heavy winter loss in bees (50% in many localities) the crop might be the heaviest in fifty years.

The yield has been better in the southern states; fair in California, with the middle west to hear from.

Even if the aggregate crop of honey for the whole of the United States should be large, the shortage of food in Europe, with famine in some sections, may mean a heavy demand for foodstuffs from this country at an advance in price of all foods, including honey. Possibly food can't be sent to Europe because so many ships have been sunk. No one at this time can even guess the future, the size of the crop, or what the prices will be. By September we may be wiser than we are now.

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Southern Bee Shippers to be Commended

This past season has been very unfavorable for bee and queen shippers. Unusually cold winter weather prevailed in most of the South. The early spring months were abnormally cool and backward, unsuited for normal production of bees and queens.

Due to heavy winter losses in the North the demand for bees and queens was unusually great. Bee shippers were taxed beyond their production capacity to meet this demand. If it had not been for the unusual effort put forth by bee shippers to give service in the face of difficulties there would be many more empty hives throughout the country than at present. Southern bee shippers deserve a word of commendation for their service to our industry.

Charlie McCarthy Recommends Honey

Over the radio Charlie McCarthy has been recommending honey to sweeten Chase and Sanborn coffee. Perhaps the sequel to this may be found in the fact that Edgar Bergen has been reading a copy of the A B C and X Y Z of Bee Culture and to the further fact that he now has a colony of bees that was taken from the side of his house in Beverly Hills. Thanks, Charlie and Mr. Bergen.

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Bees Cross During a Heavy Honey Flow

Usually bees are thought to be good-natured during a light honey flow and, conversely, become cross when the flow stops, especially if it shuts off suddenly.

When the flow is heavy and bees are rushing home they will, under certain conditions, sting man and beast if in the way of flight. At such times one must not stand in front of hive entrances.

It is during such heavy flows that neighbors and innocent by-standers on the streets may be stung if they get too near a bee yard. It is then that there are complaints against bees resulting in an ordinance prohibiting bees inside of the city limits.

Beekeepers in towns should aim to have their apiaries surrounded by a high hedge or fence to force the bees to fly up and over the street traffic.

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A Surprise in Nectar Secretion

It is generally believed that nectar secretion is favored by cool nights and warm days; that extremely hot days and hot nights retard secretion. While both theories are probably true, this season with its frequent rains and chilly subnormal temperatures has given us some new surprises.

As soon as the rains began to let up, but with the mercury at 53° F. at night and 65° during the day, bees began to drop down at the entrances heavily loaded with nectar. The surprise came when honey came in so freely under such unfavorable

conditions. The ground was soaked. The clovers, white and alsike, were in prime condition. Even though the mercury was down to 60° bees began bringing in nectar and at 65 they were almost up to the peak. It was noticeable that when the mercury at night was 55° F. and then jumped up to 70 and 75° the number of bees going in and out of the hives increased, and correspondingly, honey storage increased.

It has not generally been believed that bees would store honey at a point below 70° F. but apparently if the deviation in temperature between night and day is great enough they may do so, provided the plants are well watered as they were this season.

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Killing the Goose that Lays the Golden Egg Again

Dr. Phillips of Cornell has frequently pointed out that much of the honey put on the market in small containers is not properly processed. By this he means it has either not been properly strained, if at all, or has been over-heated.

Too often honey at roadside stands is of poor quality, so poor that the buyer will never again buy any honey good or bad. Once is enough.

Large jobbers or brokers in honey have frequently said that the beekeeper who retails a poor honey is doing the entire honey industry a damage.

The average beekeeper, says Phillips again, lacks both the skill and equipment for refining his own honey, and we quite agree with him.

There is no excuse for this as complete directions for preparing honey for market are given in all text books, particularly in the A B C and X Y Z of Bee Culture, pages 91, 93, 423 to 429. See also pages 74 and 75 of "Starting Right with Bees".

The Ontario Cooperative has complete equipment for processing the honey of its members. There should be on this side of the line local plants for processing honey. State associations could have central plants for doing this work for its members.

Here is one thing to remember: It takes skill and experience to produce a crop of honey. That same skill should be used to prepare the honey for market. The when and how to do it is given in our text books.

How to Know When Honey is Coming in

Diagnosing conditions at the entrance is not difficult if one knows how. Here are a few things that can be seen without opening a hive and yet will give a fair estimate of what is going on.

(1) Bees coming out and flying in at the entrance in large numbers may indicate a light flow of nectar.

(2) If they drop down with their bodies podded out it may mean a heavy flow.

(3) If again on the same day at nightfall, bees can be seen in large numbers on one side of the entrance fanning air into the entrance and on the other with their bodies reversed and fanning moist air **out** of the entrance, it may be assumed that a large amount of nectar has been gathered and that they are reducing the water content down to specific gravity of honey.

(4) If the bees are busy all day going in and out of the entrance and yet do not fan at the entrance at night it may be guessed that they consume the nectar gathered in brood rearing or as fast as it came in.

(5) When bees go out in great clouds in one or more directions from the apiary and return flying low, nectar is coming in.

(6) If they fan at the entrance at night the bees may need more supers.

At the height of the season it is often impossible to examine hives and these surface manifestations may show when and where to put on supers and at the same time save a lot of work.

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You Can With Honey

A lesson may be drawn from the hysteria bordering on panic that prompted hundreds of thousands of women, early in September, 1939, when half the front pages of the newspapers were black headings, to buy 25 pounds of sugar several times a day and thus force the price up by creating a temporary shortage. While it is true that this hysteria showed in many lines, creating higher prices for all sorts of commodities, there seemed to be very little excuse for the buying of sugar that was not needed immediately. There was no shortage. The woman who complacently reflected that come what may, she had a couple of hundred pounds of sugar stored away, was making life harder for her neighbor who was trying to live

sensibly. The hysteria, as everyone now knows, forced the price up and permitted profiteering, the average consumer, as usual, paying the bill.

With honey available in nearly every locality, why the panic? With the consumption of granulated sugar per capita higher in the United States than in any other country, why did the big headlines and the news flashes create a condition that can be best likened to an electric spark of terror? A slightly reduced sugar consumption might have been a blessing in disguise.

A great many women said they just had to have the sugar for canning. Suppose every honey producer saw to it that his own circle of friends knew the advantages of honey in canning fruit. Suppose that women knew that the sugars of honey are very similar to those of fruit and that therefore the blend is more pleasing. Many times fruit, such as strawberries and peaches, keep their rich original color better when canned with honey. The sugars of honey being identical with those of the fruit permit the original flavor of the fruit to stand out. If each of a hundred thousand beekeepers convinced only ten friends of the superiority of honey for canning fruit, there might not have been a panic. There might not be a honey selling problem at all.

Friend Beekeeper, does your wife or your mother can fruit with honey? If they are inclined to doubt, suggest that they can some fruit both ways, carefully marking each so that a comparison may be made later on as to color and flavor. You win, and henceforth you can with honey.

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Saltpeter Method of Treating AFB There have appeared in the British "Bee World" some articles on the treatment of AFB by the use of burning saltpeter to induce a state of stupefaction in bees, not for the purpose of disinfecting the said bees, but to prevent their taking up honey just before they are put in clean hives.

The basic principle of the treatment is the burning of all infected material, scorching out hives, but saving the bees. In other words, it is the old-fashioned orthodox treatment minus shaking or brushing and putting the bees from infected colonies onto full sheets of foundation in a clean hive.

Rags, dipped in a saltpeter solution and allowed to dry, are put into a smoker and ignited. The bees are vigorously smoked with the fumes from these rags until they are in a state of stupefaction. They drop down on the bottom board. Before they recover they are dumped in a clean hive on frames of foundation. All of the infected material, except the bees, which are now in a state of stupefaction, is set aside in a bee-proof building to be burned or treated later.

Bees that are smudged with saltpeter fumes will not take up honey, it is claimed. Their honey sacs will be comparatively empty, when if these same bees had been shaken or brushed off the combs they would be filled with honey and thus carry infected honey into the new hive.

Full details of this are given in the fifth edition of Tickner Edwarde's book, "Beekeeping for All".

It is apparent to us that the plan would not be adaptable to our American conditions. State bee inspectors for every state in the Union now recommend the complete burning of all infected material, including the bees, and this is the only way, they declare, that a territory can be cleaned up. The saltpeter plan, if we interpret it correctly, would involve a large amount of work and delay; and while it might, perhaps, save the bees, it would be cheaper and safer for us, in America, to burn the bees and buy package bees to replace them.

Experience in this country has shown pretty conclusively that bees from infected colonies may develop foulbrood, and generally do so, in from one to three years. When inspectors go through a bee yard in America, they treat **on the same day** and clean up everything **before they leave**, burying the ashes after burning.

Inspectors in America would not approve the English method of treating EFB. It is too expensive and unnecessary. The treatment here in America is to make all colonies strong, and in a severe case, kill the queen; then, after twenty-four hours give the colony a ripe queen cell. That is all,—the bees will do the rest, says Dr. Miller. To shake colonies infected with EFB onto frames of foundation as recommended in Edwarde's book is a step in the wrong direction, because shaking takes away all the brood, and weakens the colony which is worse than useless.

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From North, East, West and South

NORTHERN CALIFORNIA, July 5.

Weather: If we should search the world over, it is doubtful if a finer month of weather could be found than that of the past month in our part of California. Even so, our beekeepers here in the Bay Region have little to show for it for their honey is already in the can. A few of our commercial beekeepers have moved to other fields where, if conditions are right, they will secure another crop.

Honey Crop: The beekeepers who had their bees ready for the honey flow have no complaint. They got fully 60 pounds to the colony; their bees were in first class condition for another crop if moved promptly after the first flow was over. Ninety per cent of our commercial beekeepers were alive to the situation and their bees are now in the new fields of alfalfa and beans. If they are successful in these fields, they will have one more chance in the star thistle. Take the entire northern half of the State, if we said that 25 per cent of the beekeepers had a crop we would be accused of giving too much credit. We have in the office of the State Association, a good chance to make calculations from the reports which come in weekly from beekeepers all over the State. So far, these reports do not indicate a banner crop. So far, orange, sage, eucalyptus, and wild flower have broken no records. We still have clovers, alfalfa, beans and star thistle to hear from.

Honey Market: There is little to be said in the way of improvement of the honey market. Buyers tell us they are offered more honey than they can buy. This is undoubtedly true of the small producers who, as soon as they have a ton of honey extracted, rush into the buyer who has had no notice of his coming until he drives in and tells him he has a load of honey on his truck and asks the buyer what he is paying. This is not the best plan to raise the market price.

Miscellaneous: With the upset conditions we are having in every part of the world, it does a person good to visit the Golden Gate International Exposition on Treasure Island and see the exhibit of bees and honey, and hear the words of praise that come from the thousands of people who use honey to the exclusion of all other sweets.

It is our painful duty to announce the death of our leading beekeeper, N. E. Miller, of Colton. Several other states can make the same announcement for the extensive holdings of Mr. Miller covered many states. His name was honored wherever bees and honey was mentioned. He was a life member of our State Association. We are informed that the great bee and honey industry he established will be carried on by his wife and sons, who have the sympathy of all California beekeepers in their great loss.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, July 2.

Weather: June in Southern California was all one could ask for. Clear, warm weather prevailed over the country without any thunder showers. With the lengthening days the bloom is drying up. Thousands of acres of blossoms turning brown signifies that the jig is up for this year.

Honey Crop: Our former reports cover the crop situation pretty well. Occasionally we hear of a beekeeper more fortunate than the average but aside from the irrigated districts the crop is very, very short. The alfalfa districts of the Imperial and Palo Verde Valleys will give the usual crop. It is in these sections where practically all of the carry-over honey is located.

It is in our sage and wild buckwheat ranges where the crop will be shortest and the beekeeper will be the hardest hit.

Market: Buyers are not active and prices offered for white orange honey are not at all encouraging to the beekeeper with a short crop. Beeswax wavers around 20 to 21 cents.

Miscellaneous: "Keep more bees and lower the cost of production" is a remark we hear from beekeepers who already have a large number

of colonies. We cannot get very enthusiastic about it. Granted that five per cent of the large producers are in a position to increase 50 or 100 per cent what will it do to the other 95 per cent? We still feel that the solution to the problem is to get from 1 to 1½ cents per pound more for the honey we do produce. It is certainly not asking much to receive 6½c for white and 5c for light amber honey.

We heard of a fellow who rented ten acres of land and placed 2100 colonies thereon and gathered over 600 cases of honey. This is a big story but we believe it. The orange surely gives nectar when the conditions are right.

The average beekeeper plods along, making what honey he can and when the crop is harvested, sells for the price offered, and proceeds to get himself a job at anything that will help pay expenses until another season rolls around when his hopes are again aroused that he might make something out of the bees.

Some beekeepers report colonies very light in bees and stores on moving from the orange while others find them heavy in stores with large clusters of bees. Beekeepers in some localities report a scarcity of pollen during the orange flow which in a measure accounts for the difference in the condition of colonies.

When the spring scales on the back of the hive says 50 pounds or more they are just right and we feel that any surplus stored above that amount can be safely removed. Winter stores at all times is a good maxim.

Sumac and holly, two of our late bloomers yielded lightly and added little if any to the weight of the colony.—L. L. Andrews, Corona, Calif.

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TEXAS, July 1.

Weather: During June the weather was agreeable to both bees and beekeepers. At the beginning of the month only a few beekeepers could report that they had any honey flow and the majority of the bee men had no indication of a honey flow. From past experience it is known that if South Texas does not have its honey in the hives by the first of June there is little hope of a crop that year. With the beginning of this month local showers set in over much of the State. These increased in frequency until during the last week in the month general rain continued through Texas. The local showers brought on local honey flows and many beekeepers now have a good crop in the hives.

Prospects: From the condition of the plants, especially mesquite, horsemint, white brush, and a few other shrubs, the beekeepers are hopeful for a midsummer honey flow. The beekeepers in the cotton district are looking forward to a normal flow. The activities of plants and bees during June are indicative of why beekeepers do not lose their interest in this branch of agriculture. During the one month the beginning of which indicated no crop whatever and a possibility of having to feed the bees during the summer the other end of the month showed a fair to normal crop and the bees in better than normal condition to continue through the summer.

Miscellaneous: June 21 and 22 the Texas Beekeepers' Association held its annual meeting at New Braunfels, Texas. The meeting was well attended. Every section of the State was represented by beekeepers. The program had more than the usual number of out-of-state speakers. J. I. Hambleton, Chief, Division of Bee Culture, Beltsville, Maryland; F. B. Paddock, Extension Apiarist, Ames, Iowa; and E. E. Scholl, Director, Extension Service, Stillwater, Oklahoma, were present throughout the meeting and added a great deal by their talks. The officers elected for the ensuing year are: M. B. Hinton, President; L. W. Lange, Vice-President; H. B. Parks, Secretary-Treasurer, Route 1, Box 368, San Antonio. The meeting of 1941 will be held at Huntsville, Texas.—H. B. Parks, San Antonio, Texas.

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UTAH, July 1.

Weather and Crop Conditions: Early in the spring farmers were warned that there would be a shortage of irrigation water this season. It was hoped that the shortage might be made up by seasonal rains. On the contrary, the spring weather was more dry than usual. This May tied with the driest May on record, while June passed with an almost unbroken record of

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hot rainless days. On the evening of the last day, however, there came a splendid rain, and the forecast indicates that others are due to follow.

All over the state, field crops are in the critical stage and need refreshing moisture. If this is supplied now, a normal harvest may result. The honey crop should be no exception but no one, of course, knows what is just around the corner. Both bees and honey plants are in good condition at the present time.

Miscellaneous: The amount of honey held by the producers is almost negligible, and retail prices vary without consistent regard for the quality of the product. The price of beeswax is low, but is inclined to look slightly upward.

Bee losses this season are very much lighter than at the same time last year. They are reported as dying recently, in several of the same apiaries that suffered in 1939, but the number is decidedly smaller. In most apiaries that last year sustained heavy losses, no evidence of abnormal dying is apparent, up to date. Whether the difference is due to a light continuous flow of nectar this year at the usual period of dearth; or whether farmers are more cautious now in the way they handle insecticides, or in the amount they use; or whether other undiscovered factors enter in, is yet to be determined. It is gratifying to know that for the last six weeks an investigation has been under way, directed by Dr. A. P. Sturtevant of the U. S. Bee Culture Laboratory at Laramie, Wyoming. A thorough study is being made of the various apiaries, to uncover any abnormal conditions that might exist. Bees from various parts of the state are being analyzed for arsenic poisoning or any other element that might contribute to the cause of bee mortality.

The work is being done by field men sent out from Laramie, with the cooperation of the U. S. A. C. and the State Board of Agriculture, as well as the county agents in the respective counties where bee losses have been most apparent. The beekeepers also are lending their full support to the cause. All parties concerned are anxious to obtain the real truth in the case, and beekeepers especially are anxiously looking forward to the final results of the investigation.—State Board of Agriculture, Salt Lake City, Utah.

NEBRASKA, July 2.

Weather: We are having our annual drouth—the tenth in succession. This year, however, it started a month earlier than usual. June was exceedingly dry, with the exception of a comparatively small flood area in the northeast part of the state, which was flooded three different times. There was a flood scare after heavy rains in the old Republican River flood district, in the southwest. All-time heat records were broken when two or three days in June chalked up temperatures at the century mark and above. This is the first time the writer recalls seeing yellow sweet clover completely ruined by the drouth.

Crop Prospects: At present, prospects for a honey crop are not at all favorable. The yellow sweet clover came into bloom a little earlier than usual this year, but the bees obtained little nectar from this source. Lack of rain, with practically no subsoil moisture, caused the clover to dry up rapidly. Farmers will harvest no seed from it. White sweet clover is just beginning to bloom well and rain is needed now for this. As a rule, we receive little rain in July and August. Wells seem the answer in our country. Some irrigating is being done now, and more wells are being dug each year, which will help. We may harvest a honey crop yet though. In previous years conditions have looked just as unfavorable, then a good rain made clover perk up in a hurry.

Market: At the present time there is no new honey on the market. There is little hold-over. Sales are fair to slow, with prices firm to a shade lower.

Miscellaneous: Repeatedly we are reminded of the medicinal properties of beeswax. Recently when purchasing some beeswax, a friend of ours told us about the exceptional drawing power of beeswax used in salve. This doctor has brought relief of sufferers, afflicted with stubborn sores, which had resisted other treatment for months.

The grasshoppers have done little damage so far this season. They do not seem to be as numerous as in the past few years, so perhaps they are at last on the way out.

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We heartily approve of the very practical efforts being carried out by the American Honey Institute. The canning and preserving possibilities of honey are decidedly worth developing. Honey has been used for this purpose in the writer's home for many years. Good recipes can do wonders in boosting the sales and consumption of honey for this purpose.—Benj. Nielsen, Aurora, Nebr.

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MASSACHUSETTS, June 28.

Weather: Bees failed to make any surplus honey from fruit bloom owing to heavy rains that occurred as the trees first came into bloom and lasted almost the entire period. The set of fruit is the poorest in several years. There have been sufficient rains to keep clover in good condition, but for some reason there does not appear to be as much bloom as usual. Bees are working clover, but much of the surplus is coming from other sources. European and American linden are just starting to bloom, and there are sufficient shade and street plantings of linden to aid materially in the crop.

Spray injury has been heavy in certain sections. One of my yards suffered quite heavily, the bees being in poorer condition June 3 than they were May 1. There was a heavy loss in field bees, and brood in its early stages.

Market: Very little honey was carried over from the 1939 crop and there is some demand for it. The new crop will be available soon and offering of the new crop stimulates sales. Prices here in the East are somewhat higher than in the West but it must be considered that our crops of mixed spring and autumn flowers is only a third or less, of a normal crop produced in the clover sections.

Crop Prospects: While it may be a little too early to judge the season's production, cold weather and rains have reduced the crop produced to date. A few weeks of real warm weather may mean that we will equal last season, but so far production does not appear encouraging.

Miscellaneous: It has been too cold so far this season to raise good queens without using very strong nuclei because of danger of chilling. I am deferring this work until the buckwheat season when the weather is most favorable. Queens raised in August are excellent for requeening failing queens a year or more old. Two of my best colonies are headed with queens introduced in August, 1938. It is poor policy to requeen without due regard to the performance of the queens.

Queens that are high producers and go through two seasons without swarming are just the sort we want to use as breeders. It is not possible to judge the quality of stock that has not been under observation at least one full year. Good wintering, rapid build-up in the spring, low consumption of winter stores, and a tendency to confine their energy to production of honey instead of swarming are traits we are after. A strain that supersedes their queens during the honey flow is not desirable.

I have noted considerable supersedure among packages this spring. Such packages are unprofitable, for the loss of three weeks during the build-up period leaves weak colonies for the honey flow. Many of the supersedure queens prove satisfactory, but generally some of them are worthless. It is good practice to secure queens from several of the best queen breeders during the summer months, mark each of them plainly, and keep them under observation for desirable qualities. In 1941 note their performance before using them for breeding purposes. To purchase queens wholesale just because they are cheap, to requeen an entire apiary, may mean that you lower the quality of your stock rather than improve it.—R. E. Newell, Framingham Center, Mass.

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OHIO, July 4.

Weather: Everybody complains about the weather but nobody does anything. In May and June we had some extremely hot weather and also some very cold weather. Nearly all of June has been exceptionally cool and also a great many days of high wind and along with it there came the rain. During all this time the bees were compelled to declare "Time Out" which was far from their desire and the desire of their keepers. Now let us go back to the old adage, "It's an ill wind that blows nobody good". The excessive rain of May and June, which was more than double our annual allow-

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ance for each of these months, will certainly help prevent a drouth in July and will go far into helping our honey flow for this year and also help out next year.

Honey Crop: The prospect for a honey crop this year is exceptionally good in nearly every part of Ohio. Those who have the bees and have them in the proper condition will most certainly get a fine crop, if some unforeseen obstacle does not take place. Many commercial beekeepers right now are adding their third and fourth super. Do not misunderstand me—I am not saying that these supers are all full. In all sincerity everything looks quite promising.

Market: Honey over the state of Ohio is pretty well sold and I do not believe there will be much, if any, hold-over from 1939. The price at retail is unchanged in most districts but the wholesale price is a fraction higher.

Miscellaneous: The past winter was a severe one. The past spring was a most peculiar one. The winter loss was appalling. We have no way to definitely figure this winter loss but according to reports over Ohio this state lost in the neighborhood of $375,000.00 worth of bees in winter loss. All businesses at times suffer losses and the beekeeping industry in Ohio surely took a nice rap in the past six months. The above staggering figure does not take into consideration the vast amount of honey consumed by these colonies before they passed out of the picture. In traveling over a good portion of the state I find that the farmers' crops are running pretty strong to soy beans. Every field of soy beans is a field less of clover which means less honey per colony where bees are located. For many years our attention has been given to bees and bee behavior. I believe that the time has arrived when we should direct a great deal of our attention in assisting the farmer to better his soil conditions and increase his clover crops.

In behalf of the beekeepers of Ohio we wish to thank the Southern beekeepers for the excellent effort they have made in shipping package bees north on good schedule. To the commercial beekeepers in many states in the North the Southern beekeepers were a lifesaver. We all appreciate their efforts.—W. A. Coulter, Columbus, Ohio.

ONTARIO, July 3.

Weather: June was very wet, the first half being warm and the last half cool. Here in York County during the past two weeks we have had a very few days when the mercury got above the sixties. Yesterday, July 2, was the first day that we noticed fresh clover nectar in the combs and the highest temperature reached during the day was 68°. Today it was a few degrees higher and the weatherman promises gradually rising temperatures for the next few days.

Prospects: Clover has bloomed for over two weeks and as little honey has been stored owing to abnormal weather, we are not expecting a big crop. But alsike grown for seed is very rank so we might get a surprise yet if the weather turns warm. Bees are only in medium condition, as apiaries vary a great deal in strength, and every beekeeper I have met reports an unusual number of queens being superseded.

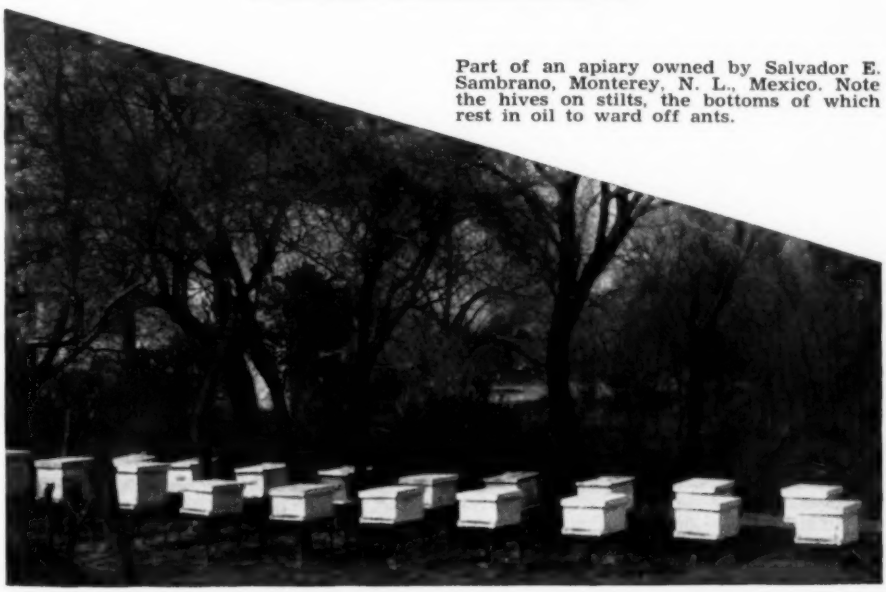
At least one-third of the time for clover bloom is past here with practically no honey stored. To make up for this a bit on the other hand, clover is very rank and ground everywhere literally soaked with moisture. This is the first time in three years that locally, the subsoil has been soaked. This will help sweet clover localities, even if we have few bees this year within reach of that plant. Basswood trees are loaded with buds but here again we do not come in on that chance of a crop, but others are more fortunate.

There appears to be little buckwheat going in as ground has been too wet to be worked. If spared till next month, of course, we can then tell all about the crop for in this as in many other things, your scribe's hind-sight is much better than his foresight.

Miscellaneous: Today I was at one of our apiaries and two colonies that were marked strong with young queens at time of clipping, swarmed out with virgin queens. If we had not been present both would probably have decamped taking full working strength of the colony, for when swarming takes place with a virgin queen, at the start of the honey flow, it surely cleans out the parent stock

in good shape. Owing to continued wet weather the boys have been unable to get around to check over colonies and we expect to lose some swarms that come out as these did today with virgin queens. Usually "Dad" does a lot of driving around to different yards as this work is the lightest I can find and being naturally inclined to take it easy, I find it a good excuse to get away from the heavier tasks. But this year it is different as I underwent a major operation a few weeks ago and even the driving mileage is cut down for the present. However I am glad to be as well as I am and the surgeon tells me that remarkable progress has been made so far and I confidently expect to be as well as ever in the near future. In passing, might say that I left for the hospital on May 18, at a time when spring work with the bees was just nicely starting and mink kits were all quite young yet. While I had many misgivings at the time, I found that things went on as usual during my absence, and it was brought forcibly to my mind that no one is indispensable. No matter what work we are engaged in, if we pass out temporarily or for good, the work will still go on.

Market: During the past two months there has been no change in marketing conditions as only retail sales on a small scale are possible owing to lack of supplies. What the prospects are for the future we have not the slightest idea, as all depends as to whether we get a crop, and even more important, as to the result of the struggle in Europe. During late winter and early spring, speculators got busy with the British market for honey and prices were raised unduly high, to the advantage of a few dealers and the penalizing of consumers in Great Britain. As a consequence, general licenses for shipping honey to Great Britain are withdrawn and only on special permit can sales be made and then only by regular shippers and dealers. At present we are told that it is hard to get a license to ship, so the situation is doubtful for the future. Personally we feel rather strongly against any interests that would unduly raise prices at a time like this and if we are blessed with a crop and permits can be obtained to ship honey, we surely will not look for or expect high prices. As we understand matters at present, in event of the market being open for honey shipments to Great Britain, it is the intention of the Government to name firms that will be allowed to import honey and also to regulate the price that will be paid. If this is done that will automatically care for the difficulties under discussion.—J. L. Byers, Markham, Ontario.



Part of an apiary owned by Salvador E. Sambrano, Monterey, N. L., Mexico. Note the hives on stilts, the bottoms of which rest in oil to ward off ants.

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Heads of Grain from Different Fields

Bees in Cities

Many report the opposition of city fathers to beekeeping in cities. Within the city of Waycross, Ga., about 20,000 population, we are blessed with a broad-minded city government. They do not object to bees; furthermore several of our policemen are enthusiastic beekeepers. For instance. Mr. George Phillips, or "B"

"B" helps both citizens and bees in their problems.

as he is commonly known, has an apiary a few feet from the bus station separated only by a hedge. He has Golden Italian bees. I have been glad to help with information and otherwise assist our policemen friends. In my opinion it's a very good chance to help the cause of beekeeping to have influential allies who understand and appreciate the problems of fellow beekeepers. In selling honey it's a good idea to leave a leaflet about bees—in other words, a little missionary work. It is up to the beekeepers to promote a better understanding among, and more cordial relations with others. At least the right kind of bee propaganda would help to clarify the situation.—Chas. H. Huey, Waycross, Ga.

Bee Smoker Carrier

The Western Canada Beekeeper, September, 1939, reports a fire in a truck visiting outyards to provide super room where needed. It was loaded with supers of combs, escapeboards and smoker fuel. On visiting one yard no supers were needed and the hot smoker was thrown in the rear of the truck. A fire followed causing damage to the extent of $200.00. The writer had a similar experience although the loss was but a pair of overalls, a lot of rope, and the smoker. A two-gallon oblong crank case oil can with the top cut out is just the right size for a three-inch smoker. When through using the smoker close the nozzle with a wad of weeds or grass. This smothers out the fire and there is left good material for relighting. Carry the smoker in the oil can and the fire hazard from that source has been eliminated.—E. G. Carr, Pennington, N. J.

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Beekeeping in Poland

In the February issue of Gleanings in Bee Culture I read that Spinster Jane would like to hear about beekeeping in Poland. I can't write much about it because I left Poland many years ago and on account of lack of publication about beekeeping in Poland I am unable to furnish more information. So I submit the little I know. In Poland the tendency for beekeeping is on a small scale, more or less as a hobby for spare time. The number usually averages about ten or twenty. In some parts of Poland can be found a few commercial beekeepers. About 75% of the beekeepers use the insulated box hives and do not use any packing for the winter. During the World War 50% of the bees were destroyed by the invading Russians who burned large straw torches before the hives and drove out the bees. Then they robbed the hives of their honey. — W. Wizos, Middletown, Conn.

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Clean Bees

One beekeeper reports buying an apiary of 25 colonies in all sorts of receptacles, including old washing machines. Let's hope the bees were clean, free from disease.—Jack Deyell, Medina, Ohio.

Artificial After-swarming

Regarding Mr. Rowland's problem in May Gleanings, page 287, the virgin swarming was apparently caused by the presence of queen cells started from the existing brood when the capped grafted cells were introduced, as you suggest. The new cells would be started by the queenless impulse, which would not be as strong if swarming cells from the same colony were used. The double moving in condition No. 1 caused a greater depletion of the mating chamber. This also reduced the after-swarming tendency, and has long been recognized as a good manipulation for preventing afterswarms. We doubt if the remedy suggested by Mr. Rowland would produce better results than condition No. 2. He should plan to cut out the natural cells.—Arthur M. Southwick, Waban, Mass.

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Synthetic Royal Jelly

On page 159 of March, 1940, Gleanings, mention is made of the use of royal jelly in the feeding of undernourished babies and regret is expressed because of the possibility that this substance may be made synthetically. No regret is necessary. In the first place, little if any royal jelly will ever be fed babies. Secondly, no beekeeper could possibly produce it for much less than two or three dollars an ounce and make any profit. If it should be produced artificially it would be unfit for such use in all probability. How many of my readers suffer from headache when they eat candy or ice-cream flavored with coal-tar flavors? Personally, I am very sensitive to synthetic flavors, my system not tolerating them.—Allen Latham, Norwichtown, Conn.

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A Contagious Cold (Caused by Eating Honey)

In a zoological garden there were elephants. One of them, called Jumbo, caught a cold. The veterinarian prescribed one pound of honey to be given the sick elephant. Jumbo devoured the honey eagerly under the watchful eyes of his jealous companions. The next day the veterinarian asked the attendant, "How is Jumbo this morning?" He replied, "Jumbo is all right, but all the others have a cold. They evidently felt that they could stand a 'honey-cure'."—(Taken from St. Joseph's Blatt.)—Bro. Stephen Babek, Subiaco, Ark.

Portable Extracting House

Our portable extracting cabin is 30 feet long, 12 feet wide, 9 feet high with a slope of one foot. It is built in 5 sections, including the floor. The sections are bolted together and can be dissembled and loaded on a truck and again assembled in a short time. It is both mouse-proof and bee-tight

This extracting house looks permanent, but can be picked up and moved.

with 6 windows and a large door on each end. The cost was $150. This picture was taken last summer. We like the cabin because it can be moved easily when a beekeeper finds better range for his bees from time to time.—John Burghardt, Jewell, Iowa.

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Smoker Fuel

We use discarded burlap sacks mostly as they are one of the easiest to get as well as the most economical and satisfactory. The newer the better. We bought a lot of slightly burned new sacks at a very low price that proved excellent.

We spread them out on the ground a hundred or so at a time. Then we take a five gallon can with end removed containing oil as removed from the crank case of your car and with a white-wash brush proceed to sprinkle them well. After a while in the sun the oil will be well soaked in.

Then roll sacks lengthwise and cut in three lengths. If you take time to tie each all the better. A sharp ax cuts them easy. This makes just the right size piece to fill the smoker. It lasts a long time, gives a dense smoke that is not too strong. A few hours' work will prepare enough to last all summer.—L. L. Andrews, Corona, Calif.

[Note: We use greasy waste from our machine shop for smoker fuel. It is very satisfactory. We also use burlap sacks when waste is not availa ble. This is more difficult to light than waste.—Editor.]

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American Honey Institute News Notes

National Honey Week will be celebrated this fall from October 28 to November 2.

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August is the rush month for literature so we will appreciate it if you will get your orders in early.

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Have you met "Prem" the new "Swift Baby", packed by Swift & Company? It is a delicious Swift's Premium Brand Meat and is put up in a colorful attractive package. To prepare it for dinner, the recipe on the container calls for honey.

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Two graduate women in the class in Journalism at the University of Wisconsin are writing on "Honey". One woman is a graduate of Illinois and the other of Minnesota University.

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Why has the country become honey conscious? Is it because it was considered lucky to eat honey?

Is it because of its romantic appeal?

Is it because people are beginning to realize nature is pretty far-seeing in providing the best food?

Or is it because the Institute is on the job every day working for the beekeeper and honey?

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Ideas running through one's head this morning:—

Who will come out with a new idea, something new, something different?

Can the honey container be used for some other purpose? Is it one that the housewife would like to have in a set of six?

Isn't it possible to make more profit on a case of fancy goods than on case lots of the ordinary?

If you are selling honey for use in infant feeding, wouldn't the sanitary appearance be improved if the package were wrapped in cellophane?

How would an assorted package of just two kinds of honey sell?

Wouldn't a Honey Tooth Paste go over big?

Would honey producers like to have us prepare a leaflet for holiday cookery?

Can we get the package of honey into the customers hand by having it on the counter instead of on the shelf?

Is there a honey poster to catch the eye?

Does the public understand the relation between food and health and that good food helps prevent disease?

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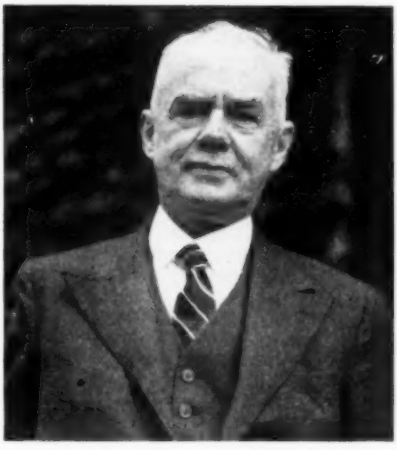
Again may we ask you to get your order for your recipe leaflets in early,

A recipe leaflet should accompany every package of honey sold.

If you sell to bakers the leaflets "Honey in Baked Goods" and "Honey Cakes" should be given them. Good recipes makes good business.

"If you want to keep selling them you must keep telling them."

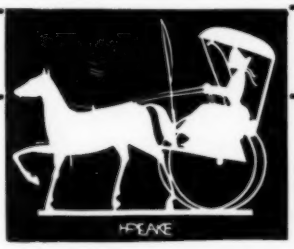
A Visitor



George S. Oettle, born in South Africa, of late years a resident at Chatham, N. J., called on The A. I. Root Co. recently. He has been making a special study of bee behavior for many years and is a contributor to bee journals, both in this country and in England as well as South Africa. He is an ex-president of the New Jersey State Beekeepers' Association. He is now touring the country and will probably be seen at the Michigan Convention.

While at Medina he gave a very interesting talk on the wild life of South Africa. He has faced lions more than once in their native habitat, and knows what it is to have his hair stand on end, and a lion can do that trick to perfection, he says.

Spinster



Jane Says:

With the coming of the new moon early this month, the weather has cleared up, but up to that time we almost despaired of having anything in our gardens. Heavy rains fell, just one deluge after another. We put in our garden-seed between times, and the rain beat them into the ground. The ground being clay, baked, and only the larger seeds could work their way through the hard crust that formed. Even these, corn, beans, etc., looked very pale and sickly.

Boy and I were worried over our bee-venture. All our bees except two colonies were package bees. We had had great success in getting them safely established. Every queen was doing her utmost to fill everything up with brood, and we were forced to feed them for a while. When clover bloom began, it was too wet, and the bees, like ourselves, became a bit cranky. "Just to think", said we, "Here it is late in June, and nothing can grow in our garden!" "Just to think of all the nectar going to waste," thought the bees, "And we needing it so badly with all these young things to feed!"

Then the sun began to shine, warm, drying winds blew, and presto! Everything was as it should be. Our garden was planted again, honey flowed again. Bees and women got busy and forgot to grouch.

Alsike clover fills the air with fragrance, great patches of it here and there in the meadows, like great flower beds, and are the bees happy! The meadows are humming like a great busy colony. It is the sweetest music I have heard in years. The hum of industry means the hum of content. There are no strikes nor rumors of strikes in the bee kingdom. The only strike known there is the sit-down one, when they strike at interfering, meddlesome humans, who, Hitler-like, would take away all they hold most precious.

Investing in seventeen packages, when money is none too plentiful, and then thinking your bees would not even pay for themselves, is none too pleasant. Boy looked pretty blue, but now he is back to normal, and can smile with the best of them. Honey is coming in fast, and though perhaps later than usual, we will surely harvest a nice amount after all. Clouds usually are imaginary, and the silver lining at last shines through.

I told you of the hive we thought had made away with its too industrious queen? Well, it has a new queen now, and with her coming, a new ambition. It is doing well.

The swarming fever struck two colonies, both those maverick, wild swarms, but so far the package bees have not been affected. They just keep on working, but so full were they of young bees and brood, Boy has given them supers. How much they are like we women in war time. We feel that a great responsibility rests upon our shoulders. Our men must guard the home and fight, if necessary. It is up to us to raise the food, all we possibly can of it, and to conserve everything in the food line we can find to conserve.

We are blessed in having an abundant supply of wild fruits, though not so blessed in having also innumerable pests to torture us while we garner these fruits. Of course, I mean black flies and mosquitoes.

Right now blue berries are fast ripening, strawberries still linger, and in spite of flies these must be gathered and put up, for winter is surely coming. Such things vary the diet, and with an abundance of vegetables, will help feed our own families, and perhaps many poor refugees. Honey will save sugar, and why should we ever fear famine! If it comes to us it will be because we have not done our part.

Many of those delicious-sounding recipes in Gleanings will be tried out in our kitchen this winter, and most of our honey will be stored for home consumption, though already a fine market is awaiting it.

May our American and Canadian beekeepers solve the sugar problem this year, by producing an abundance of a much better sweetener, plenty of honey.—Spinster Jane.

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Asked and Answered

Upper Entrance in Two-story Colony

Question.—Is an upper entrance needed in a two-story hive?—Angus Kennedy, Wisconsin.

Answer.—An upper entrance in a two-story brood-chamber hive may not be absolutely essential, but in our opinion, it is an advantage. We do not know exactly what you mean by an upper entrance. There are various kinds. We have been using a ⅝" auger hole in the middle of the upper brood chamber. We leave this hole open winter and summer. Some use a top entrance, made by extending or building a tunnel from the hole in the inner cover to the outside, for winter use. Considerable experimental work is being done along this line and apparently this matter of hive entrances is yet in an experimental stage. We like the upper entrance because the bees can get out easily in the winter, and furthermore, the colony is not likely to be suffocated as the result of dead bees or ice clogging the main or lower entrance when this upper entrance is used.

Shipping Nuclei

Question.—When shipping nuclei is it best to cage the queen? When shipping by truck, is top ventilation only needed?—R. H. Gillespie, Arkansas.

Answer.—It is unnecessary to cage a queen when she is shipped in a nucleus, provided the queen is taken from the same hive as the nucleus. As a rule, a queen will continue laying eggs in transit, when she is shipped on combs containing brood and honey. When shipping bees in nuclei or full colonies by truck at this time of the year, it is advisable to have them screened at the tops and bottoms of hives, to provide ample ventilation. Moving should be done on a cool day, if possible.

Drawn Combs, Propolis, Etc.

Question.—What is meant by drawn and undrawn combs? Just what is pollen and for what is it used? What is propolis?—J. D. Trimmer, Pa.

Answer.—A drawn comb is one with the cells built or drawn out by the bees. A comb that is not drawn out is simply a full sheet of foundation in the frame, that the bees have not begun to work on. Pollen is collected by the bees from certain plants and is used for brood rearing. It is fed to the larvae after being elaborated upon and mixed with nectar by the nurse bees. Pollen contains protein which is very necessary for young bees or brood that is developing. Propolis is a resinous gummy substance gathered by the bees from certain trees and shrubs. It is very sticky and is used by the bees for chinking small openings in the hive.

A Swarm Control Measure

Question.—Would the bees in a one and a half story hive draw out full sheets of foundation if they are put in the brood chamber and the old combs put on top over a queen excluder during the sweet clover bloom? Would this also prevent swarming?—Byron David, Missouri.

Answer.—Your proposed method of putting the queen below a queen excluder, in a brood chamber containing frames with full sheets of foundation, at the beginning of the major honey flow from sweet clover, and raising the combs in the story and a half hive, above the queen excluder, should prevent swarming. If the honey flow is heavy, the bees should draw out the full sheets of foundation in the brood chamber below the excluder, and the queen should occupy the combs. It would be advisable to destroy all queen cells in the combs above the queen excluder, on the ninth day after raising these combs of brood above the excluder. May we repeat: what you have in mind would work to good advantage during a good honey flow. During an intermittent honey flow it might be necessary for you to feed some sugar syrup in order to induce the bees to draw out the full sheets of foundation in the brood chamber.

Handling of Food Chamber

Question.—Should the queen excluder be placed between the brood chamber and food chamber or on top of the food chamber?—Osmond L. Barringer, North Carolina.

Answer.—It is usually customary to let each queen occupy the brood chamber and the food chamber throughout the season. Some beekeepers put the queen down into the brood chamber, under a queen excluder below the food chamber at the beginning of the main honey flow in order to make sure that the food chamber is filled at the close of the

season. In localities where there is no fall honey flow of any consequence, this is a good method to follow. However, in regions where there is a heavy fall flow the upper brood chamber or food chamber is likely to be well filled at the close of the season when the queen excluder is placed above the double brood chamber. During the spring and early summer months, it is well to let each queen occupy the double brood chamber in order to insure having very populous colonies ready for the main honey flow.

Adding a Swarm to a Weak Colony

Question.—When the swarming season begins, can a new swarm be added to a weak colony to make a comb-honey producing colony out of it?—Melvin Pifer, Illinois.

Answer.—It should be possible to unite a swarm of bees with a weak colony, in order to strengthen this colony for comb honey production. If no attention is paid to the queens, one of them will be killed and the other retained. During a honey flow the swarm could be added to the weak colony by shaking the swarm in front of the hive containing the weak colony. There would not likely be any fighting. If, however, you attempted uniting during a dearth of nectar, the bees would likely fight. It would then be necessary to feed the bees in the weak colony all the sugar syrup they would take before uniting. However, during a heavy honey flow, the bees in the swarm, also bees in the weak colony, would be full of nectar and would unite readily.

Double Brood Chamber Colonies

Question.—Please tell me what to do (bees a hobby) with one of my hives. Double wall, packed, 2-story—bees covering about 3 frames of brood. Honey coming in O. K. But all activity is in top or food chamber, the lower half is absolutely empty—no honey, pollen, brood, etc. This makes plenty of room for field bees, but I wonder if it would not be better to have a little more use of the bottom story. Would you put the queen below and a queen excluder over her, or change the frames from above, down? It will soon be time to put a super on and I hate to do it with the bottom empty. Perhaps it would be best to leave them alone and let the queen be crowded down by honey.—K. Weier, West Virginia.

Answer.—We have been using double brood chambers for a number of years. It is a fact that the lower brood chambers are sometimes practically empty. However, as the season advances, the queen will start laying eggs in the combs of the bottom brood chamber. She naturally begins her activities in the top brood chamber, sometimes called the food chamber, because there is more heat near the top of the hive. If you have a good honey flow you will doubtless find that both brood chambers will eventually be filled with brood, honey, and pollen. You will, of course, add supers on top as they are needed. The use of the double brood chamber gives the queen ample comb space for brood-rearing, also, there is ample space for the storage of honey and pollen, so essential to the life of the colony throughout the season. At the close of the season, after you have removed your surplus honey, you should have colonies in brood chamber hives ready for winter. This obviates the necessity of having to feed colonies full combs of honey or sugar syrup. Sometimes, however, when there is a dearth of nectar during the late summer and fall months, it may be necessary, even with the use of the double brood chamber, or food chamber hives, to feed colonies that may be short of stores the following spring. It is very seldom, however, that we have had to feed colonies in double brood-chamber hives. They are practically self supporting throughout the season.

One Method of Transferring

Question.—One of my colonies occupies a hive with crooked combs, some of which consist of drone cells. How can I get the bees transferred into a good hive with straight combs?—Paul Funk, Pennsylvania.

Answer.—A simple method of transferring can be used at the beginning of a good honey flow. Simply place a deep super of frames containing full sheets of foundation wired, on top of the old hive, under the cover, of course. When the bees get crowded below, they will enter the new hive and draw out the full sheets of foundation. As soon as the queen is found up above, a queen excluder should be placed under the new hive to keep the queen from going back down into the old hive. At the end of 24 days, after the worker and drone brood has all emerged, the old hive may be removed and the new hive set down on the bottom board. What bees remain in the old hive may be shaken out in front of the new hive on the parent stand. Any honey or wax in the old hive may be properly disposed of. The colony will then have a hive with good combs.

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Talks to Beekeepers

Editor M. J. Deyell in the apiary.

The Beekeeper's New Year

In beekeeping literature that has appeared recently, the correct method of applying seasonal apiary management has been stressed. In this latitude the beekeeper intending to winter his bees in preparation for the 1941 honey crop should begin this month to get his colonies into good condition for winter. August is said to be the beginning of the beekeeper's new year, because success in securing the maximum crop next year depends to a large extent on the apiary management applied from August 1 on.

It is true some beekeepers in the far North either let their bees die in the fall, or kill them, with Cyanogas, saving only enough honey for packages that are installed in the hives the following spring. It is possible, however, to winter bees successfully in this latitude and further North if the fundamentals of good wintering are applied.

Good Queens Essential

To produce populous colonies for winter each colony must have a good queen. The bees that emerge during September and October are the bees that live through the winter. The old bees that have practically worn themselves out gathering the crop die off before spring arrives. Hence, the importance of having a vigorous young queen in each colony during the fall months cannot be over-emphasized.

Some years ago we used to kill off all queens in early August and put in young queeens. One year we were so busy taking off honey and the hives were piled so high with supers that we didn't get to the work of requeening. I worried some during the winter and wondered if the colonies would go through in normal condition.

The following spring I found most of the colonies in good condition and discovered that about 80% of the colonies had young queens. Most of the old queens were superseded during August and September. These apiaries were in western Ohio. In that region the honey flow is long drawn out because of the prevalence of sweet clover and alfalfa. Queens are worn out sooner than they would be normally because of the terrific strain of continuous egg laying during the long season.

In my opinion, queens reared under the supersedure impulse are as good or possibly better than other queens. But regardless of how the queens are produced the fact still remains that young vigorous queens in the fall are very essential.

Tricks in Queen Introduction

For some years, when introducing a young queen to a colony we have made a practice of pinching off the old queen's head and dropping her down in the hive between the frames at the time the new queen is introduced. Just yesterday I talked with a large commercial beekeeper from New York State who told me that he uses this method and believes that it helps to insure successful introduction of queens. The bees discover the dead queen and she is found later on the alighting board of the hive. It would seem that after disposing of the old dead queen the colony is more likely to accept the new queen.

We have found that the surest way to get a queen introduced is to make a colony queenless for nine days, then destroy all queen cells and introduce the new queen. After nine days of queenlessness, the colony has no eggs or larvae from which to start queen cells, and is likely to accept the new queen. It is very nec-

essary to destroy **all cells** at the end of nine days when the new queen is put in.

Importance of Food—Honey and Pollen

This past winter there was a terrific loss of bees throughout the North and in some regions not so far North. This loss has been attributed to the severe winter and long confinement of bees during protracted cold spells, also the lack of adequate protection against the cold. That is only part of the story. The facts are that one of the worst late summer and fall drouths on record visited most of the Northeastern states and Canada in 1939. This resulted in a shortage of pollen and nectar. Many colonies went into winter in a subnormal condition and starved before spring arrived or during the early spring months.

Bees must collect an abundance of pollen during the late summer and fall months to insure normal brood-rearing and populous colonies of young vigorous bees for winter. Also, each colony must have an abundance of honey, not less than 50 or 60 pounds, to go into winter.

Management of Food Chamber

This honey must be properly placed and this is where correct food chamber management comes in. In regions where there is a light fall flow the queen, in a double brood-chamber hive, should be confined to the bottom brood chamber during the fall months. This helps to insure having the upper brood chamber, or food chamber crammed full of honey, because brood-rearing is then confined to the bottom chamber. **It is essential to remove the queen excluder late in the fall,** giving the queen access to the combs in both chambers during the winter.

In regions that give a heavy fall honey flow the queen is usually driven down into the lower brood chamber, because of the incoming nectar, making it unnecessary to confine her in the lower chamber below an excluder during the fall months.

The importance of having the upper brood chamber, or food chamber, crammed full of honey cannot be over-emphasized. A populous colony in a double-story colony with the upper story well filled, also some honey in the lower story, is not likely to starve, even during a severe winter. More will be said in a later talk about wintering.

This shows our method of giving ventilation at the back of the double-brood chamber. The pile of supers with queen excluder is pushed forward ¼". This appears to be a swarm control measure.

Swarms

Last evening a friend told about hearing over the radio the following: "A swarm of bees in May is worth a load of hay; a swarm in June is worth a silver spoon, but a swarm in July isn't worth a fly".

This year swarming in some regions has been quite prevalent. "After swarms" with virgin queens have issued quite generally. Perhaps some one who professes to know, will tell us why, in one instance, a prime swarm will issue with the old queen and no after swarms will follow, and in another instance one or more after swarms with virgins will come out at intervals of seven or eight days, after the prime swarm issues.

I have my theories about it but I would like to hear from others. Some will say, "why don't you clip your queens to prevent prime swarms from getting away?" Somehow we never got started clipping queens. I think clipping queens has some advantages, especially in comb honey production.

We have found that putting a comb of brood into the hive intended for the swarm has a tendency to attract the bees into the hive and to help the swarm get established more readily in the new home. A swarm given a comb of brood is not likely to abscond.

Honey Rolls In

It is amazing how much surplus honey strong colonies will store during a week or ten days when conditions are right. What I said in a re-

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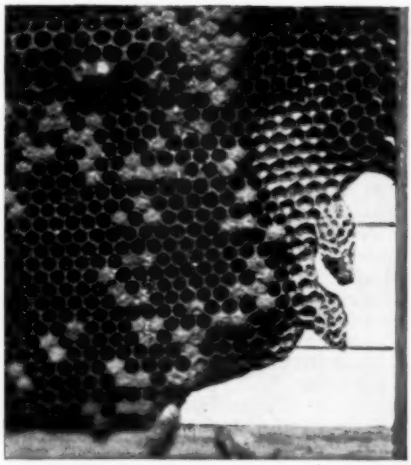
cent talk about the importance of providing ample comb space, or supers, has been demonstrated in this locality within the past two weeks (today is July 13). We have some colonies with six deep supers above double brood chambers. If the flow continues I hardly know how we will manage unless we extract honey from some of the supers. We like to leave honey with the bees until it is well ripened. At the same time we do not care to have supers piled up too high without propping the piles to prevent their being blown over by a wind storm. However, it is not often we have this problem.

Even during the month of August it is necessary to provide ample supers. There are frequently surprises in nectar secretion during this month, especially in regions where a fall flow may occur.

Keep White and Dark Honeys Separated

In buckwheat regions it may be difficult this year, due to the lateness of the clover flow, to get the white honey properly cured and off the hives before the bees start storing buckwheat honey. In parts of Ontario where sweet clover and buckwheat are grown this is one of the beekeeping problems.

This colony was found clustered out this spring during a warm spell in late May. The entrance reducer was left in by mistake and bees were forced out of the hive. Note the small auger hole in the upper brood chamber, also the small entrance below.



This shows a defective brood comb and how bees will take advantage of the space left at the lower corner to build queen cells.

Putting on Supers Late in the Day

Bees have been quite cross this year during the clover flow. To keep on friendly terms with two farmers who have alsike clover fields close to one of my apiaries, I have avoided working the bees while the alsike was being cut because of the possibility of the bees getting mixed up with the horses. I supered this yard late in the evening so that the bees would "cool off" during the night.

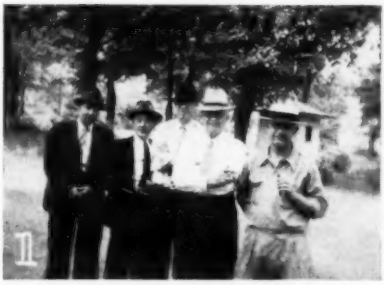
I still practice and prefer top supering, mainly because it saves an enormous amount of work, also because adding a super or supers on top of each pile results in the minimum of disturbance.

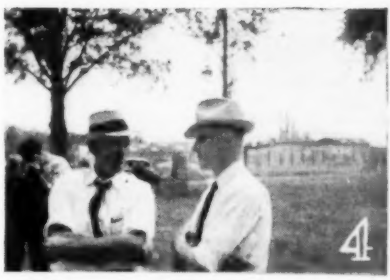
New Honey—It's Delicious

The other evening I brought in a comb of new honey, just off the hive, and was it delicious? It didn't last long after it was put on the table for supper. The unusually fine flavor of the clover honey is bound to help the honey market.

To the hundreds of back lot beekeepers throughout the country who have some surplus honey to sell may I suggest that you try running a classified ad in your local paper continuously for a few months. Erect an attractive honey sign in front of your home and be sure to mention the sign in your ad. Then give customers good service and good honey, with a smile, charge a reasonable price for your product and you are bound to make good. But, remember, "To sell you must tell".

Tri-County Field Meet at Delphos, June 23





The Tri-County field meet was well attended in spite of the threatening dark clouds. Rains did not come until the session was over. Thanks to the excellent preliminary work of Secretary Simon O. Allen and President Homer Nihiser there was a good program well carried out.

But perhaps the big feature of this field meet as well as others that I have attended

(Continued on page 529)

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

CHOICE white clover honey in new 60's. Noah Bordner, Holgate, Ohio.

NEW CROP clover extracted honey. H. E. Crowther, Cass City, Mich.

FINE clover honey, case or car. Leslie A Davis. R. R. 2, Union City, Ind.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

GOOD CLOVER extracted in sixties, 6c; light amber, 5½c. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

NEW HONEY—white clover, new cans, finest ever, new comb. N. B. Querin, Bellevue, O.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

NEW CROP clover honey, comb and extracted, also, some 1939 buckwheat. C. B. Howard, Geneva, N. Y.

FOR SALE—1940 crop, white clover extracted honey in 60-lb. cans. L. S. Griggs, 711 Avon St., Flint, Mich.

CLOVER CUT COMB. Pure clover extracted honey in 5's or 60's. George Eykamp, Cuyahoga Falls, Ohio.

MICHIGAN White Extracted in 60's. Strictly high grade in new cans. M. H. Hunt & Son, Lansing, Mich.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's Central Ohio Apiaries, Inc., Millersport, Ohio.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

NEW FANCY TUPELO—10-lb. pail, $1.25, F.O.B. Apalachicola, Fla. Also light amber. Write for prices. Stevenson's Apiary, Apalachicola, Fla.

NEW WHITE COMB—No. 1 per case, $3.00; Fancy, $3.50; extracted, 6c in new cans, white heavy body and fine flavor. F. J. Smith, Castalia, Ohio.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

OUR 1940 CROP of Michigan clover honey is now ready for the market. New cans and cases. Let us supply you with your requirements during the coming season. E. D. TOWNSEND & SONS, Northstar, Michigan. The center of the Clover belt.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

HONEY WANTED—White and amber in new 60's. Alexander Co., Rt. 3, Toledo, O.

WANTED—White and light amber extracted honey. George Eykamp, Cuyahoga Falls, Ohio.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Linden flower honey. Please send sample and price. Ludwik Kapusta, 3701 West 14th St., Cleveland, Ohio.

WANTED—One car water white new extracted honey, also comb and chunk. Lose Bros., 206 E. Jefferson, Louisville, Ky.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

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WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Apiaries, 12243 12th St., Detroit, Michigan.

FOR SALE

QUEENBEE PAINTING outfits, $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

EXTRACTING MACHINE—4-frame used one season, $11.00. T. Spatny, 3917 S. Scoville Ave., Berwyn, Ill.

90 CASES, 60-lb. cans, 2 cans to case, 30c case for lot; 10 or more, 35c case. Dr. Hayman, Doylestown, Pa.

FOR SALE—60-lb. tins, used once,—and new 60's and glassware at lower prices. Alexander Co., Rt. 3, Toledo, O.

WAX worked into quality medium brood foundation for 15c pound; 100 pounds, $10.00. Fred Peterson, Alden, Iowa.

CUT COMB HONEY—Cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Michigan.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

ELECTRICAL honey uncapping knife complete with transformer, 110-120 volt, secondary, 1½ volt. Price $12.00. Lifetime guarantee. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

CARTONS for cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

ITALIAN QUEENS, three-banded, 50c each. Robert B. Spicer, Wharton, N. J.

NORTHERN-BRED queens, bright, hardy Italians, 50 cents each. Shirl Baker, Rodney, Michigan.

FOR SALE—Italian Queens. Untested, 75c; tested, $1.50. George Stanley, Dixon, Ill.

ITALIAN THREE-BAND QUEENS, 35c each, three for $1.00. D. W. HOWELL, Shellman, Georgia.

Look---Three-Banded Italian Bees and Queens

They are real honey-getting bees. They are gentle and easy to work with. A trial order will convince you. Satisfaction guaranteed. Write for prices.

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Queens, ... .65

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THE IDEAL APIARIES Wiggins, Miss.

Package Bees and Queens

Bright Three-banded Italians. Well improved stock. If you want the very best in bees that money can buy. A trial order will convince you that our loose queen package, prompt and safe delivery, is just what you have wished for.
2-lb. pkg. with queen, $1.75; 3-lb. pkg. with queen, $2.25; Queens, 50c each.
TAYLOR APIARIES, LUVERNE, ALA.

We thank our many customers for a nice business and for patience when we were sometimes unavoidably late. Owing to bad weather it has been a hectic season.

We still offer queens at 50c for 1-11, 45c for 12-23, 40c for 24-49 and 35c for 50-up. Cash with order, safe arrival guaranteed.

Our best friends are satisfied customers.

MORLEY PETTIT, Tifton, Georgia

ITALIAN QUEENS

Shipped same day order is received.
1, 50c; 6, 45c; 12 or more, 40c

CITRONELLE BEE CO.
Citronelle, Alabama

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

XUM

DON'T BE MISLED

Quality, Service and profitable returns cannot be had from packages at unreasonably low prices.

IMPORTED ITALIAN BEES

produce more surplus and require less honey for wintering than other strains. Give us a chance to prove our claims by purchasing your supply of

PACKAGE BEES FROM

ROSSMAN & LONG, Box 133, Moultrie, Ga.

—PRICES—

2-lb. packages, $1.70; 3-lb. packages, $2.25. Loose queen packages, add 15c each. Nuclei with one frame brood, add 30c each. Queens, 50c each.
Above prices to be in U. S. Money or its equivalent.

QUEENS

Italians of Quality

50c; 12 or more 40c.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c, 3 queens, $2.00. Stamps accepted for single queen.
Koolairy veil, $1.50 postpaid, SAFIN queen cage, $1, for ten; 15c for one.

ALLEN LATHAM
Norwichtown, Conn.

For Sale---Pure Italian Bees

and queens. Nothing but the best.
Queens, 35 cents each.
Pound of bees at a new low price.
You send for them, they go.

GRAYDON BROTHERS, Greenville, Ala.
Route 2.

Quality Three-Banded Italian Queens

Quick Service. Satisfaction guaranteed.
30 cents each.

HOMAN BROS. Shannon, Miss.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

FOR SALE—Empire State strain Italians. Bred for honey production, 50c each. Coggshall & Son, Groton, N. Y.

CAUCASIAN QUEENS, untested 40c each until Nov. 1st. Safe arrival. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

ITALIAN QUEENS. N. J. Experiment Station stock, selected, carefully reared, 75c each. Circular. E. G. Carr, Pennington, N. J.

FOR SALE—47 hives of bees, guaranteed free from disease. Equipment for extracting honey. Victor G. Berrian, Highland, N. Y.

FIFTY-SIX colonies bees each with two deep supers, all new equipment, guaranteed disease free. T. Tymoff, 644 East 48th St., Brooklyn, N. Y.

QUEENS with character. The best that can be produced. Shipped when you want them. At a price you can afford to pay. 20 years' experience. D. P. Green, DeLand, Fla.

REAL PETS—Brown's Stingless Bees. Good honey gatherers, non-swarmers. Season's price, $1.00 for a queen, over 10, 90c each. Brown's Apiary, Cape May Court House, N. J.

QUEENS—Caucasian, Golden Italian, Three-banded Italian, and the famous Leather-colored Italian Queens. 50c each. Write for quantity price. Guilford Apiaries, Guilford College, N. C.

GOLDEN QUEENS, excellent quality. Hardy, gentle, productive, health certificate Satisfaction guaranteed. Untested, 50c, tested, $1.00. O. E. Brown, Route 1, Asheboro, North Carolina.

FOR SALE—Small packages and queen outfit in central South. Under $800. And if buyer wishes, will buy queen output from him for balance of season. Capacity, 2000 or more. Box 3, care this journal.

QUALITY 3-band "Honey Girl" Italian Queens. Line bred for honey gathering, gentleness, prolificness and beauty. 35c EACH. 2-lb. pkg. with young laying queen $1.50; 3-lb. pkg. with young laying queen $2.00. Satisfaction guaranteed. A. D. St. Romain Apiaries, Diamond, Louisiana.

CHOICE BRIGHT Italian queens that are a pleasure to work with. The stock has been bred and selected in the North the past 36 years. For good winterers, hustlers, and gentleness. Price 75c each and $8.00 a doz. Emil W. Gutekunst, Colden, N. Y.

EXTRA YELLOW Italian queens, that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested $1.00 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

NORTHERN BRED Leather-colored queens, 35c, 3 for $1.00. We cooperate with honey producers in selection of our breeding queens and believe our stock to be as good as the very best. For prompt service and good queens send your orders to Diemer Bee Co., Liberty, Mo.

FOR STRONGER COLONIES, bigger honey crops, and gentler bees, try our prolific well-bred 3-banded Italian queens used for years by leading beekeepers of the U. S. and Canada. Select young laying queens, 50 cents each; ten, 45 cents each; twenty or more, 40 cents each. Prompt deliveries, no disease. We have one of the largest best equipped queen rearing places in the South. H. C. Short, Fitzpatrick, Ala.

FOR SALE—75 colonies of bees. Inspection certificate furnished. Selling because of ill health. D. J. Blocher, Pearl City, Ills.

EXTRACTORS FOR SALE

EXTRACTOR reversible two-frame, both hand and motor power, complete with four capping baskets. One ninety-gallon new honey tank with honey gate all for $27.00. One only, one-fourth horse-power motor for extractor $4.50. Linders Store, Delphos, Ohio.

MAGAZINES

DAIRY GOAT JOURNAL, Dept. 419, Fairbury, Nebr. (big monthly magazine, 3 years $1), gives complete information. Introductory 5 months, 10c.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Elitor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P. India.

MANY beekeepers have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto 2. Ontario.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

Requeen Every Hive Every Year

For better wintering.
For bigger crops.
For greater profits.

Untested queens, 50c each; 25-100, 45c each; 100 up, 40c each.

J. M. Cutts & Sons

Rt. 1. Montgomery, Ala.

July Queens August

When you buy queens, you want good queens.

Three-banded Italians, the kind that build up quickly.

40c each, three for $1.00; or
30c each, lots of 100.

The Crowville Apiaries

Rt. 1. Winnsboro, Louisiana

QUICK SERVICE

Dependable Selected
ITALIAN

Queens

THE PUETT COMPANY
Hahira, Ga.

QUEENS

Carefully produced from
Select Three-banded Italian Stock

35c each, any number.

Safe arrival and complete satisfaction guaranteed.

JOHN C. HOGG,
TIFTON, GEORGIA
P. O. Box 343

Queens by return mail 25c

2-lb. Package with Queen, ... $1.25
3-lb. Package with Queen, ... 1.60

BRIGHT 3-BAND ITALIAN, guaranteed in every respect. Packages F.O.B. Express.

NORMAN BROS. APIARIES
Ramer, Alabama

Mountain Gray Queens for August

Seasonable conditions (with us) for queen-rearing are ideal and we are still rearing queens at peak capacity. Send us your rush orders. Queens, 50c each. 15% discount to dealers. Service and queens guaranteed.

BOLLING BEE CO., Bolling, Ala.

XUM

JUST NEWS

(Continued from page 504)

The Ohio beekeepers' summer meeting is scheduled at the Camden High School Grounds, Kipton, Ohio, for a two-day session. This large Ohio meeting is a cooperative effort of the Lorain County Beekeepers' Association, the Ohio Beekeepers' Association, and the Extension Service, Ohio State University. Some of the more important subjects, which will be covered at the educational sessions are: Harvesting the honey crop, Marketing the honey crop, Equipment for the honey house, Wax rendering, Successful wintering of bees, Ohio bee inspection service, The modified two-queen system for honey production.

• • •

The annual Vermont Beekeepers' Picnic-Meeting will be held August 24, at the Apiary of E. J. LaBombard, Vergennes, Vermont. Mr. LaBombard has an apiary of 300 colonies right near the bank of Otter Creek, an ideal place for a picnic-meeting. We shall have several speakers and other features to make an interesting program. All beekeepers, in Vermont and outside, are invited to attend; and also, of course, their families and friends.—Charles Mraz, Sec.

The Palmetto State beekeepers' will hold their second annual short course at Clemson, S. C., August 28 and 29. Beekeepers from other states, as well as our local talent, will appear on the program. Every beekeeper, his family, and friends are invited to attend this two-day short course.—E. S. Prevost, Extension Bee Specialist.

• • •

Nephi E. Miller of Salt Lake City, Utah, the largest migratory beekeeper in the U. S. A., or possibly in the world, passed away recently. At the height of his business career he is said to have operated 20,000 colonies over an area extending from Mexico to Canada. An article covering his activities will appear in a near future issue of Gleanings.

• • •

The Fifth Wabash Valley Round-Up of Illinois and Indiana Beekeepers will be held at Newport, Indiana, Saturday, Sept. 7, 1940. The Newport 4-H Bee Club is helping to make this the biggest Round-Up yet. The Round-Up needs no introduction; the fact that the last drew some 800 people from a dozen different States is ample proof that it is one of, if not the biggest, meet of all. This year we are presenting five well-known people in the beekeeping world who will talk on subjects for which they are well qualified. Everything at the Round-Up is free, including 250 pounds of fried fish.

"Requeen Now"

Next year's honey crop depends in large measure on your attention to this important duty NOW. Your colonies are only as good as the queens that head them. This is as true in package bee production as in honey. Why risk old or doubtful queens when good ones can be had so reasonable.

Prompt shipment, dependable service, and complete satisfaction assured when you order from

JENSEN'S APIARIES

MACON, MISSISSIPPI

Home of "Magnolia State" Italians.

Prices: 1-10, 45c each; 11-25, 40c each; 26-100, 35c each. Select Tested from our annual requeening, while they last, 75c each.

SHAW'S THREE-BAND ITALIAN QUEENS

Are guaranteed to please the most exacting. Unsolicited testimonials from hundreds of customers. As to their wintering, and honey storing qualifications, make us feel safe in recommending them to you.

Price 30 cents.

A. E. SHAW

Shannon, Miss.

Requeen with Hollopeter's Queens

Well reared of a breeder, one of the best we've produced in thirty years queen-rearing. This Italian stock possesses about all the desirable qualities. Outstanding in hardiness, prolificness, working, gentleness, uniformity of color, and traits. Truly, "queen of them all", fit to rule the kingdom in any apiary. One queen, untested, 60c; two or more, 50c each.

WHITE PINE BEE FARMS, Rockton, Pa.

DELPHOS FIELD MEETING

(Continued from page 523)

was the little impromptu groups assembled here and there as shown on page 523. At these times beekeepers talk over prospects and problems. Perhaps the livest topic was the hard winter and why some colonies died and others lived. It was admitted that the wintering problem when the weather was severe, continuously cold with scarcely a let-up was not solved yet; that while packing was helpful there were other factors no less important.

Fig. 1. Reading from left to right,: Tom Baldwin, Chas. Tollafield of The A. I. Root Co., D. H. Morris and R. J. Porter. No. 2. Mell Pritchard, the veteran queen breeder in the center is telling some of the tricks of the trade. No. 3 Chas. A. Reese, state bee inspector is telling Baldwin what he knows about the heavy winter loss in Ohio. Fig. 4. Left, E. W. Long, Ohio's most extensive beekeeper tells how he wintered his bees,—four to a case with packing.

Figs. 5 and 6. Woodman's Extractor in the rear mounted on a light truck. Beekeepers in pairs conversing. Figs. 7 and 8. Assembly pavilion, where meeting was held.

Palmetto Quality Queens

are three-band Italians of highest quality. Prices: three for $1.00 in lots of nine; 30c each in lots of more than nine. If your orders amount to 100 queens for balance of season after June 1, the price will be 28c each. No disease, and a square deal.

C. G. ELLISON & SONS
Belton, S. C. Rt. 2.

York's Package Bees and Queens

Quality Bred Italians More for Your Money

Queens, 50 cents each; ten up, 40 cents each. Two-pound packages with queens, $1.60 each; ten up, $1.50 each; three-pound packages with queens, $2.10 each; ten up, $2.00 each. Prompt shipment.

Book orders now for shipping dates wanted. Full weights, safe arrival and satisfaction guaranteed.

York Bee Company
Jesup, Georgia, U. S. A.
(The Universal Apiaries)

Important?

• • • Well designed hives, strong properly reinforced foundation, wood and wire queen excluders, rigid frames are all important for profitable beekeeping.

• • • But equally important is the fine Italian queen. She should be young and a prolific egg-layer. Root pure bred Italian queens have made beekeeping profitable for beekeepers.

• • • Fall requeening is profitable—helps to insure plenty of young bees to live over winter.

Queens 1 to 10, 75c; 11 and over, 70c.
Order now.

Root QUALITY THE A. I. ROOT COMPANY, MEDINA, OHIO

SPOERRI'S GOLDENS
Personally reared powerful fertile GOLDEN QUEENS improved and bred UP from Italian stock. Remarkably beautiful bees, gentle, large, and CHAMPION HONEY PRODUCERS. 60c each, postpaid. 50c each in single shipments of 5 or more.
SPOERRI APIARIES
St. Bernard, P. O. Louisiana

Mott's Northern Bred Italians
Thanks to the many advising the less winter loss, by using the Northern queens, $1.00; 2 or more, 75c each; 25, $17.50. Tested, $2.00, $3.00, $5.00. Fair to good breeders. Virgins, 3 for $1.00. All queens guaranteed pure mated, or will replace.
E. E. MOTT,
Glenwood, Mich. U. S. A.

QUEENS
Italian or Caucasian
One to 25—50 cents each
26 to 49—45 cents each
50 and up—40 cents each
Weaver Apiaries, Navasota, Texas

VITAMINS IN HONEY

(Continued from page 487)

because there is a danger that frost will destroy it. The seed, they advised, must be sown very thick so that all the ground should be utilized and no room left for weeds to shoot up through the interspaces. If there are weeds they should be pulled up by hand, in preference to the weeding-hook.

Let the new discovery of Vitamin K boost the value and appreciation of alfalfa, this extremely useful forage and honey plant. If the presence of Vitamin K in alfalfa honey is not yet ascertained, the failure should not be blamed on the bees.

New York City.

MERRILL BEE COMPANY
Italian Bees Queens

	Quantity	
With queens—1 to 50		50 to 5000
2-lb. pkgs.	$2.00	$1.75
3-lb. pkgs.	2.50	2.25

Untested queens, 50c each.
"Mississippi's Oldest Shippers"
Queen breeders for 30 years
Bucatunna, Miss.

BETTER-BRED QUEENS THREE-BANDED ITALIANS
3 for $1.00
Head all of your colonies with our Better Bred Stock. They have proven their good qualities throughout the U. S. A. and Canada. Use them for increase, requeening and swarm control.
CALVERT APIARIES, CALVERT, ALABAMA

We Produce Queens Until Late Fall
Use our Quality-Bred Progeny Test Queens for best results. Our prices place Record-Breaking Quality within reach of all.
1 to 99 @ 35c each. 100 or more @ 30c each.
GARON BEE COMPANY **Donaldsonville, La.**

CARNIOLAN QUEENS
Requeen with Carniolans and save on winter stores. Carniolans build up rapidly in the spring and are the most excellent workers. Jan Strgar Strain.
Untested Queens, 50c each; Ten or more, 45c each, postpaid.
For air mail, add 5c per queen.
EPHARDT'S HONEY FARMS, TORRAS, LOUISIANA.

XUM

FINDING A FLORIDA BEE TREE

(Continued from page 486)

before, from his first station. From there, at the said convergence, he very probably soon will be able to spy out either the lightning-riven opening or perhaps a woodpecker's trip-hammer bill's handiwork, which had left for Mr. and Mrs. Honeybee their needed knot-hole entrance into a hollow tree's roomy warehousing spaces.

At any rate, it is a well-known fact that the doughty dweller of a Florida's Everglade depths, either by "fair means or foul" is a past-master at the art of patiently waiting, watching, and foraging until stored-honey locations finally are discovered; and then without any compunctions as to who may be the land's absent owners, with his keen-bladed trusty axe he fells the hollow tree, large or small, and blithely chops away the outer shell until the treasured honeycomb comes into view.

At this point in the proceedings, both smoke-smudges and face-veilings or head-nets are of vital necessity; otherwise the much disturbed and now angrily buzzing bees with their incessant stingings soon would put to flight the bravest despoilers of their happy home-sites.

The contents of one well filled bee-tree each month will supply bountifully an Everglade cracker's family and also his several neighbors and in-laws for miles around with about the only "sweeten'n" of which they know — since store-bought articles of provender are rarities in their young lives and almost unknown in their households.

Too, for this choicest yield of nature's sweets, often pines the city dweller, as well as inhabitants down deep in the wilds of Florida's forests primeval.

Columbia, So. Car.

THREE-BAND ITALIAN QUEENS

—Price—

Young laying queen, 35c each.

W. O. Gibbs

Phone 150. Willacoochee, Ga.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers,—10% to 40% ahead of Italians. Foundation stock from mountainous region of Terek, Caucasus.

CARNIOLANS

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolans were used in the recent Iowa Experiment Station test showing Carniolans best for Northern and Western conditions. Have supplied many other Agricultural Colleges and Experiment Stations with them. 33d year with them. Both races bred here in a climate like their native land thus insuring their good qualities. August is best to requeen for next season. Ask for free paper.

Prices: Untested queens, 1 to 5, 60c each; 6 or more, 50c each. Tested, $1.00 each.

By Air Mail 5c extra per queen.

ALBERT G. HANN

Glen Gardner, New Jersey

Moore's Strain

LEATHER COLORED ITALIAN QUEENS— SUPERIOR STOCK

50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. Moore

R. 3, Falmouth, Ky.

Former address, Morgan, Ky.

QUEENS 25c

Bright 3-Band Italian Queens By Return Mail

NORMAN'S BEES are guaranteed to please.

2-lb. pkg. with Queen, ...$1.25

3-lb. pkg. with Queen 1.60

Take advantage of these prices above and requeen those weak and failing colonies with queens of highest quality that are guaranteed to build them up and be of complete satisfaction to you. All packages F.O.B. express.

State Health Certificate Furnished.

JOHN A. NORMAN

Rt. 2, Ramer, Alabama

XUM

STOVER'S---The House of Quality

Package Bees Queens Bee Supplies

Now featuring those good Three-Banded Italian and Caucasian Queens

Scientifically Produced
Rigidly Culled
Outstanding Strains
Prompt Service
Honest Treatment

—Prices—

1 to 24	$ .50 Each
25 to 99	.45 Each
100 or more	.40 Each

Clipped or by Air Mail at no extra cost

THE STOVER APIARIES, Mayhew, Mississippi

THE BEEKEEPERS' FRIEND

Beekeepers need a friend. The **American Honey Institute** is the beekeepers' best friend, because:

(1) The **Institute** helps to create an interest in honey by keeping in touch with food experts and industries that handle foods.

(2) By contacting leaders in Home Economics in Colleges and Universities. More than 1000 home economic leaders have requested literature on honey.

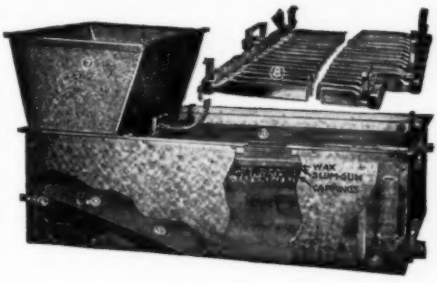
(3) Mrs. Harriett M. Grace, Director of the **Institute** office, has been heard in radio talks on honey a number of times.

(4) The **Institute** office furnishes tested honey recipes at a nominal cost.

Write the **Institute** for samples of literature on honey.

The **Institute** needs funds to carry on, so, **Help yourself by helping the Institute.** Even $1.00 will help.

The American Honey Institute, Madison, Wisconsin



Brand Capping Melter

Many extensive honey producers will tell you that the Brand Capping Melter is the most outstanding extracting convenience invented in modern times.
At the end of the day, you have a clean-up of the work, with the highest quality wax in cakes and honey in the tanks.

S. P. Hodgson & Sons
New Westminster, B. C. Canada

Manufactured by
A. G. Woodman Co.,
Grand Rapids, Mich.

Superior Honey Co.
Ogden, Utah

We discontinued all shipping June 10th and will use the remainder of the season for making preparations for our 1941 business.

CAUCASIAN APIARIES
Brooklyn, Ala.

→ Hello, Folks ←

STEVENSON'S LINE-BRED GOLDENS ARE THE BEES AND QUEENS YOU NEED.
We are wonderful!
Write to STEVENSON'S APIARIES, WESTWEGO, LA., for circular.
2-lb. pkg. with queen, $1.90; 3-lb., $2.50.
Queens, 50c; tested $1.25.
Discount on 10 or over.

Labels

FOR GLASS AND TIN

Be wise, send your order in now before the big rush which holds up hundreds of orders each year. Attractive designs make Root's the preference. Root fine labels pull customers.

Catalog Free

Root QUALITY BEE SUPPLIES

The A. I. Root Co.

Medina, Ohio

Root QUALITY BEE SUPPLIES

XUM

Knight's Leather-colored Italian Queens

The Best Honey-gathering Strain

—Prices—

1 to 9, 50c each
10 to 19, 45c each
20 and more, 40c each

All queens guaranteed mated pure. No charge for clipping. Immediate shipments.

Jasper Knight
Hayneville, Ala.

"YES" Queens via Return Mail

No delays.
I ship when you want them.

Price List
Select Untested Queens, 50c each.

20 or more, 40c each.
Select Tested, $1.00 each.

All Queens Guaranteed Purely Mated.

W. E. Harrell
HAYNEVILLE Alabama

←Morrison's Northern→

Three-banded or Leather-Colored Italians. Our foundation stock comes direct

→ From Northern Italy ←

—QUEENS—

Untested.....50c. Tested.....$1.00. Breeders.....$5.00

The Cloverdale Apiaries, Cloverdale, Ohio

QUEENS

3 for $1.00 postpaid

35c each

Queens mailed daily from Paducah—3-banded Italians only.

The Walter T. Kelley Co., Paducah, Ky.

2 Years $1.50

American Bee Journal — monthly: published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey.

—SAMPLE COPY FREE.

$1.00 a year, 2 years $1.50 in U. S. and Canada. Combined with Gleanings in Bee Culture, both magazines, **ONE YEAR, $1.60.** This offer good only in the United States. Address—

American Bee Journal, Hamilton, Ill.

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24-Hour Service

Root QUALITY BEE SUPPLIES

HEADQUARTERS

For 3-Ply Foundation, Quality Hives, Triple-Locked Corner Frames, Sections, Veils, Smokers, etc.

See Your Root Dealer

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121 N. Alabama St.

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Among Your Beekeeping Friends

A number of persons have wrtten us for our offer to reliable persons. However, we still have a few localities where the right person can secure a number of subscriptions. Write for sample copies. Give references.

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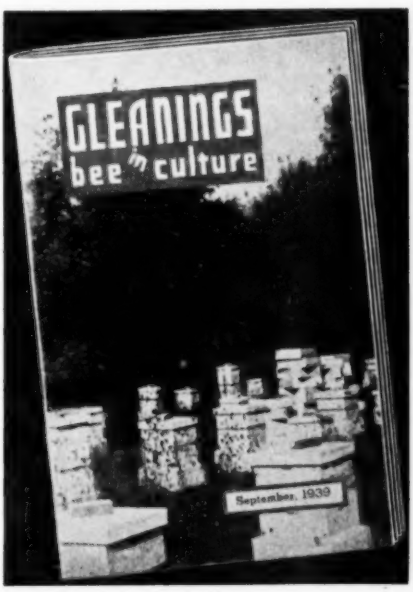
Gleanings in Bee Culture
Medina, Ohio



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NORTHWESTERN BEEKEEPERS!

for Lower Prices----Faster Service----Lower Freight on

HAZEL-ATLAS HONEY JARS

CONTINENTAL CANS AND PAILS

SEND YOUR ORDERS TO

MONDENG MFG. CO., 118 Cedar Lake Road, Minneapolis, Minn.

P. S. Have you got our price list?

New Prices on Cans

THE A. I. ROOT COMPANY, MEDINA, OHIO

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